

HOONAH HARBOR, ALASKA

LETTER FROM THE SECRETARY OF THE ARMY TRANSMITTING

A LETTER FROM THE CHIEF OF ENGINEERS, DEPARTMENT OF THE ARMY, DATED NOVEMBER 4, 1970, SUBMITTING A REPORT, TOGETHER WITH ACCOMPANYING PAPERS AND AN ILLUSTRATION, ON HOONAH HARBOR, ALASKA, REQUESTED BY RESOLUTIONS OF THE COMMITTEES ON PUBLIC WORKS, UNITED STATES SENATE AND HOUSE OF REPRESENTATIVES, ADOPTED APRIL 21 AND MAY 19, 1960



APRIL 13, 1972.—Referred to the Committee on Public Works
and ordered to be printed with an illustration

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1972

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ILLUSTRATION ACCOMPANYING THE REPORT OF THE
DISTRICT ENGINEER

Plate 1. Recommended Improvement.



DEPARTMENT OF THE ARMY
WASHINGTON, D.C. 20310

April 5, 1972

Honorable Carl Albert
Speaker of the House of Representatives
Washington, D. C. 20515

Dear Mr. Speaker:

I am transmitting herewith a favorable report dated 4 November 1970, from the Chief of Engineers, Department of the Army, together with accompanying papers and an illustration, on Hoonah Harbor, Alaska, requested by resolutions of the Committees on Public Works, United States Senate and House of Representatives, adopted 21 April and 19 May 1960.

The views of the State of Alaska and the Departments of the Interior, Transportation, and Health, Education, and Welfare are set forth in the inclosed communications. The environmental statement required by the National Environmental Policy Act has been submitted to the Council on Environmental Quality.

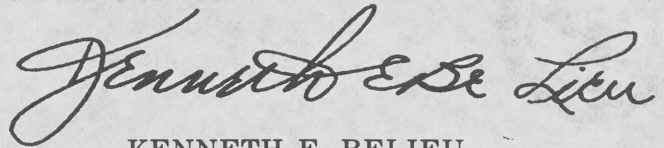
Since this project meets all the requirements of Section 201 of the Flood Control Act of 1965 and involves little or no controversy, I recommend that the project be approved for appropriations.

Subsequent to preparation of the report of the Chief of Engineers, a new interest rate has been adopted for discounting future benefits and computing costs. Using the prescribed rate of 5-3/8 percent, the benefit-cost ratio would be reduced from 1.7 to 1.6.

The Office of Management and Budget advises that there is no objection to the submission of the proposed report to the Congress; however, it states that no commitment can be made at this time as to when any estimate of appropriation would be submitted for construction of the project, if approved for appropriations, since this would be governed by the President's budgetary objectives as determined by the then prevailing

fiscal situation. A copy of the letter from the Office of Management and Budget is inclosed as part of the report.

Sincerely,



KENNETH E. BELIEU
Acting Secretary of the Army

1 Incl
As stated

COMMENTS OF THE OFFICE OF MANAGEMENT AND BUDGET

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

16 March 1972

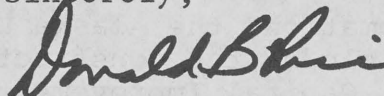
Honorable Robert F. Froehlke
Secretary of the Army
Washington, D. C. 20310

Dear Mr. Secretary:

Mr. Robert E. Jordan's letter of February 17, 1971, submitted the favorable report of the Chief of Engineers on Hoonah Harbor, Alaska, requested by resolutions of the Committees on Public Works, United States Senate and House of Representatives, adopted April 21 and May 19, 1960.

You are advised that there would be no objection to the submission of the proposed report to the Congress. No commitment, however, can be made at this time as to when any estimate of appropriation would be submitted for construction of the project, if approved for appropriations, since this would be governed by the President's budgetary objectives as determined by the then prevailing fiscal situation.

Sincerely,



Donald B. Rice
Assistant Director

COMMENTS OF THE STATE OF ALASKA

KEITH H. MILLER
GOVERNOR



STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

August 24, 1970

Lieutenant General F. J. Clarke
Chief of Engineers
United States Army
P. O. Box 7002
Anchorage, Alaska 99501

Dear General Clarke:

Reference is made to your letter to Governor Miller requesting comments on your report to the Secretary of the Army on proposed harbor improvements at Hoonah, Alaska.

Governor Miller has had members of his staff review the report, and they concur in the conclusions and recommendations presented. We were particularly pleased to note that the Board of Engineers for Rivers and Harbors recognized the importance of factors other than economic considerations in arriving at their recommendations. The growth and the well-being of the isolated Southeastern Alaskan communities are largely dependent on fishery-oriented industries, and we are convinced that the proposed improvement at Hoonah will stimulate new economic development in the entire area.

For your information, the Alaska Department of Public Works has tentatively included the construction of the inner harbor improvements in their Capital Improvement Program for fiscal year 1972-73. This schedule is flexible, however, and can be revised to coincide with the progress of the Federal project. In addition, the Department is ready to assist the City of Hoonah in providing any additional local operation requirements as may be necessary.

The State of Alaska is in agreement with your report and concurs in your recommendations.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "B. L. McMurtrey".

B. L. McMurtrey
Executive Assistant

COMMENTS OF THE DEPARTMENT OF THE INTERIOR



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

6 November 1970

Dear General Clarke:

This responds to your letter of July 31, 1970, asking for our comments on your proposed report and draft environmental statement on Hoonah Harbor, Alaska.

We have reviewed the proposed report and draft statement and in general concur with your recommendations. We offer the following comments for your information and use.

The Alaska District of the Corps of Engineers lists Hoonah in Zone 3 on its seismic probability maps. As such, it is assigned to the Zone where it is expected that earthquakes greater than magnitude 6 and possibly greater than 8 can occur and where there is a possibility of major damage to manmade structures.

In the event of a large earthquake in the area, the fine-grained materials in the harbor area, as well as the sand and gravel beach deposits along the shoreline, probably would be subject to strong ground motion. Such shaking could cause compaction and settlement of the underwater sediments with accompanying subsidence of structures built on them. Lateral spreading and slumping toward a free face, such as toward the deeper water off the north breakwater or into the dredged area, also could occur. Some of the materials, particularly the silts and fine sands, might be subject to liquefaction and flow seaward as a fluid mass, such as occurred at Seward and Valdez during the 1964 Alaskan earthquake. Tsunami waves or abnormal waves generated by submarine sliding might overtop the breakwaters by considerably more than the 3.7 feet now proposed as allowable for storm waves and abnormal tides.

Hoonah Harbor offers little opportunity for outdoor recreation, and no significant adverse effects on fish and wildlife resources are expected.

To protect water quality during the construction period in accordance with provisions of Section 21(a) of the Federal Water Pollution Control Act, as amended, and Executive Order 11507, we recommend that contract specifications require all contractors and subcontractors to:

1. Exercise care in the relocation of any petroleum product pipelines and take precautions in the handling and storage of hazardous materials, such as petroleum, herbicides, and pesticides, to prevent accidental spillages or usage that would result in water pollution.
2. Provide and operate sanitary facilities to adequately treat and dispose of domestic wastes in conformance with Federal and State water pollution control regulations.
3. Perform all construction operations so that they will keep erosion, turbidity and siltation at the lowest level practicable.

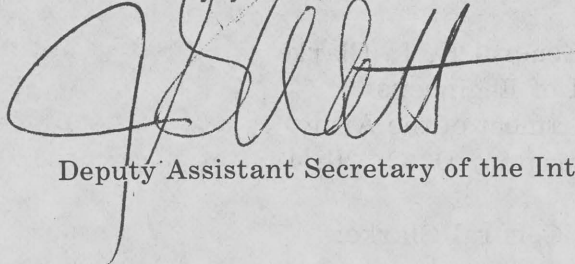
The report provides for local interests to establish regulations concerning the discharge of untreated sewage, garbage and other pollutants into the waters of the harbor. In order to further ensure conformance with Section 2(d) of Executive Order 11514, we recommend that the following stipulations be included in the report:

1. The municipality shall provide for the collection and disposal of solid wastes from users of the small boat harbor.
2. The municipality shall provide for the collection, treatment and disposal of domestic and industrial liquid wastes from users of the small boat harbor.
3. Liquid fuel shall be dispensed to boats in an approved manner.

4. Plans and specifications for the foregoing shall be reviewed and approved by the State water pollution control agency and the Federal Water Quality Administration prior to approval of the project.

We appreciate the opportunity of presenting our views.

Sincerely yours,



Deputy Assistant Secretary of the Interior

Lt. General F. J. Clarke
Chief of Engineers
Attn: ENGCW-PD
Department of the Army
Washington, D. C. 20314

COMMENTS OF THE DEPARTMENT OF TRANSPORTATION



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDANT (AWL)
U.S. COAST GUARD
WASHINGTON, D.C.
20591

11 August 1970

Lt. General F. J. Clarke
Chief of Engineers
Department of the Army
Washington, D. C. 20314

Dear General Clarke:

This is in reply to your letter of 31 July 1970, addressed to Secretary Volpe, concerning your proposed report on Hoonah Harbor, Alaska.

This report, together with the pertinent papers, has been reviewed and the following comments are offered.

The proposed project would require the construction of three rubblemound breakwaters, aggregating 2,790 feet in length, so designed as to provide a protected harbor area of about 15 acres. A sheltered harbor is urgently needed to support the fishing economy which is the basic source of income for the people of Hoonah. Additionally, the project would require a diversion dike 2,125 feet in length to divert fresh water from the harbor and thus aid in the prevention of ice formation.

The Coast Guard notes that a sheltered harbor for the area is desirable and has indicated that the proposed harbor improvements would require the installation of a minor lighted navigational aid to mark the breakwater entrance. The estimated cost of the aid is \$2500.00 and it would require about \$200.00 annually for maintenance.

The Department of Transportation finds no objection to the conclusions or recommendations contained in your report. The opportunity afforded to review and offer comments on the report is appreciated.

Sincerely,

R. Y. EDWARDS
Rear Admiral, U.S. Coast Guard
Chief, Office of Public and
International Affairs

COMMENTS OF THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

OFFICE OF THE SECRETARY

WASHINGTON, D.C. 20201

10 November 1970

Lt. General F. J. Clarke, USA
Chief of Engineers
U.S. Corps of Engineers
Department of the Army
Washington, D.C. 20315

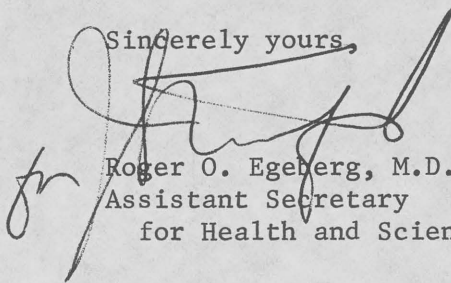
Dear General Clarke:

As requested in your letter of July 31, 1970, the report and draft environmental statement on a proposed navigation project at Hoonah Harbor, Alaska, have been reviewed by the appropriate agencies of the Department that have an environmental interest.

The report describes a proposed navigation project at Hoonah Harbor near the northeast corner of Chichagof Island in southeastern Alaska. In order to protect fishing vessels from wave action during storms, and damage from ice floes, the report proposes the construction of a 15.1 acre marina area with three rubble mound breakwaters and a rubble mound diversion dike. The proposal also provides for the construction of an entrance channel and maneuvering area.

Our review of the draft environmental statement indicates that the project as proposed will have no adverse effect on environmental matters of concern to the Department of Health, Education, and Welfare. We have no objection to the authorization of this project insofar as Departmental interests and responsibilities are concerned.

Sincerely yours,


Roger O. Egeberg, M.D.
Assistant Secretary

for Health and Scientific Affairs

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

Office of the Assistant Secretary for Health

Washington, D.C. 20462

10 November 1978

Mr. J. Edgar Hoover
Federal Bureau of Investigation
Washington, D.C. 20535

Dear Mr. Hoover:

Reference is made to your letter of October 12, 1978, regarding the above-captioned matter. The information provided in your letter is being reviewed and the results of the review will be reported to you as soon as possible.

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HOONAH HARBOR, ALASKA

REPORT OF THE CHIEF OF ENGINEERS, DEPARTMENT OF THE ARMY



IN REPLY REFER TO

DEPARTMENT OF THE ARMY OFFICE OF THE CHIEF OF ENGINEERS WASHINGTON, D.C. 20314

ENG CW-PD

4 November 1970

SUBJECT: Hoonah Harbor, Alaska

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress the report of the Board of Engineers for Rivers and Harbors, accompanied by the reports of the District and Division Engineers, in response to resolutions of the Committees on Public Works of the United States Senate and House of Representatives, adopted 21 April 1960 and 19 May 1960, respectively, requesting the Board to review the report of the Chief of Engineers on Southeastern Alaska, published as House Document No. 501, Eighty-third Congress, Second Session, with a view to determining whether any modification of the recommendations contained therein is advisable at this time, with particular reference to dredging and construction of a breakwater at Hoonah Harbor, Alaska.
2. The District and Division Engineers recommend, subject to certain conditions of local cooperation, the improvement of Hoonah Harbor, Alaska, by construction of protective breakwaters, a diversion dike, and an access channel to form a small-boat harbor. They estimate the initial cost at \$3,728,000, of which \$3,710,000 would be the Federal cost for construction, \$3,000 would be the Federal cost of navigation aids, and \$15,000 would be the non-Federal cost of lands, easements, rights-of-way, and sewer relocation. They further estimate annual charges at \$220,400 and annual benefits at \$379,200. The benefit-cost ratio is 1.7.
3. The Board of Engineers for Rivers and Harbors concurs in general in the findings of the District and Division Engineers and recommends the improvement subject to certain requirements of local cooperation.
4. I concur in the recommendations of the Board.

A handwritten signature in dark ink, appearing to read "F. J. Clarke", is written over the typed name.

F. J. CLARKE
Lieutenant General, USA
Chief of Engineers

ENVIRONMENTAL STATEMENT



DEPARTMENT OF THE ARMY OFFICE OF THE CHIEF OF ENGINEERS WASHINGTON, D.C. 20314

IN REPLY REFER TO

ENG CW-PD

13 January 1971

SUMMARY COORDINATION OF ENVIRONMENTAL STATEMENT ON HOONAH HARBOR, ALASKA

1. Coordination of Environmental Statement.

<u>AGENCY</u>	<u>Date of Transmittal</u>	<u>Date of Comments</u>
Department of the Interior	31 July 70	6 Nov 70
Department of Transportation	31 July 70	11 Aug 70
Department of Health, Education and Welfare	31 July 70	10 Nov 70
State of Alaska	31 July 70	24 Aug 70

2. Summary of Agency Comments and Views of the Chief of Engineers:

The correspondence from the interested State and Federal agencies is attached as an inclosure to the environmental statement. The agency comments concerning the environmental aspects of the project and the response of the Chief of Engineers are discussed below.

Department of Transportation.

Comment: No adverse comments on the environmental statement were received

State of Alaska.

Comment: No adverse comments on the environmental statement were received.

Hoonah Harbor, Alaska

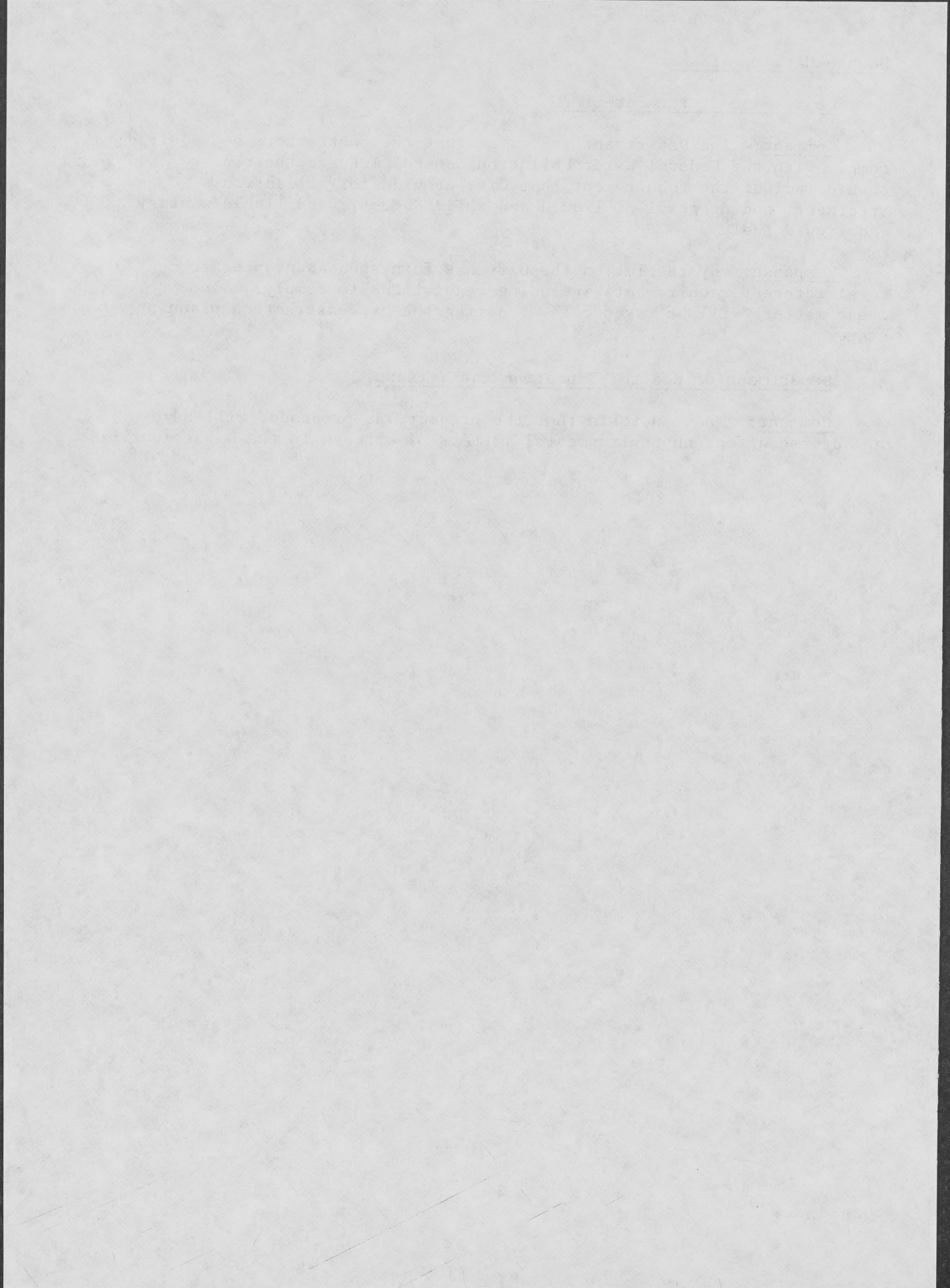
Department of the Interior.

Comment: The Department indicates that the contractors be required to comply with the Federal Water Pollution Control Act and the report should include the requirement that City provide for collection, treatment, and disposal of liquid and solid domestic and liquid wastes, and liquid fuel.

Response: By resolution the City has furnished assurances to meet local interest requirements including regulations to comply. Also, these matters will be taken care of during the preconstruction planning stage.

Department of Health, Education and Welfare.

Comment: They indicate that the project, as proposed, will have no adverse effect on environmental matters of concern to the Department.



21 July 1970

ENVIRONMENTAL STATEMENT
FOR
HOONAH HARBOR, ALASKA

PREPARED IN CONNECTION WITH
A SURVEY REPORT OF THE
ALASKA DISTRICT, CORPS OF ENGINEERS
ANCHORAGE, ALASKA

HOONAH HARBOR, ALASKA

ENVIRONMENTAL STATEMENT

1. Project Description. The proposed project consists of harbor improvements at Hoonah, Alaska, in the northeastern part of Chichagof Island in southeastern Alaska. At present Hoonah does not have a protected harbor. The harbor improvements would include three rubble mound breakwaters totaling 2,790 feet in length which would protect a berthing area of 15.1 acres; a 2,125 foot long rubble mound diversion dike; and a dredged entrance channel and mooring basin. The breakwaters would have a height of 24 feet above mean lower low water and the entrance channel and basin would be dredged to a 16 feet depth below mean lower low water.

2. Environmental Setting Without the Project. The basic environmental values associated with Hoonah Harbor relate to human and marine life factors. The fishing industry dominates the economy of the community. In the absence of protected mooring space, extensive damage occurs to vessels and facilities. These conditions are not considered favorable for expansion of the fishing industry. Hence, the economic growth potential of the community is restricted and this will adversely effect the social well being of the people in this community.

The shoreline of Chichagof Island is generally precipitous and rocky. Small beaches occur at creek mouths or sheltered coves. Water depths of 10 or more fathoms are encountered within 100 yards of shore. Diurnal tides of 14.8 feet occur with water temperatures ranging from about 42 degrees to 55 degrees Fahrenheit. The proposed improvements are located in the vicinity of the tidal flat and the site is presently unused, unsightly, and unsanitary. A sewer outfall dumps untreated wastes into the project site and the bottom material in the area is polluted to some degree.

No assessment has been made of the nutrient value of the bottom in the vicinity of the proposed project but it is believed that the area does not hold any significant value as a food source for human or marine life.

3. Impact Statement. The following information is furnished in response to Section 102 (2)(c) of the National Environmental Policy Act of 1969.

a. Identify "the environmental impacts of the proposed action." The proposed project would have an impact on the existing environment of the fishing city of Hoonah. Man's environment would be enhanced through the

protection given to his fishing vessels, and by the encouragement given to expansion of the fishing industry with attendant gains in monetary well-being and economic stability. The area in the vicinity of the project will be enhanced by removal of an unsightly tidal mud flat and by minimizing the sediment encroachment from the flats into the waterfront. The structures will blend into the existing scene and the dredged bottom material will be spoiled in acceptable locations. Construction activities and the project induced expansion of the fish industry should provide some increased employment and income to an area which has a history of chronic and persistent unemployment and under employment well in excess of the national average.

b. Identify "any adverse environmental effects which cannot be avoided should the plan be implemented." A minor but temporary adverse impact on the fishery resources may take place when the dredging process increases the level of turbidity in the vicinity of the project. Disposal of the material removed in the dredging process will either be at sea or on the tidal flats close to the work area. Disposal procedures will be in accordance with the guidelines established by State and Federal pollution control agencies. However, Federal and State fish and wildlife management agencies have concluded that construction of this project would have no detrimental effects on fish or wildlife resources.

c. Identify "alternatives to proposed action." As discussed in the District Engineer's report, all feasible structural alternatives to the proposed action would occupy the same site with approximately equal impact on the environment. The only non-structural alternative available is that of not providing the harbor improvement. This would continue the present pattern of preventable damages and vessel loss at an average annual cost to the owners of \$43,900. It would also mean foregoing expansion in fishing activities estimated to be worth \$321,400 annually in net income to the fishermen as well as an increase of about 15,000,000 pounds annually of protein-rich fish for the nation's food supply. Net benefits foregone would amount to an estimated \$158,800 annually.

d. Discuss "the relationship between local short term uses of man's environment and the maintenance and enhancement of long term productivity." The proposed project would make changes in the local topography and ocean floor in the vicinity of Hoonah. It could cause a temporary and minor adverse effect on the general environment during construction processes but it would materially enhance the present and future productivity of the local fishing industry and the economy of the City of Hoonah.

e. Identify "any irreversible or irretrievable commitment of resources which would be involved in the proposed action should it be implemented." Man-days of labor needed to build the project and the removal of 304,000 yards of stone from the quarry are the only known irreversible or irretrievable commitment of resources involved.



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDANT (AWL)
U.S. COAST GUARD
WASHINGTON, D.C.
20591

11 August 1970

Lt. General F. J. Clarke
Chief of Engineers
Department of the Army
Washington, D. C. 20314

Dear General Clarke:

This is in reply to your letter of 31 July 1970, addressed to Secretary Volpe, concerning your proposed report on Hoonah Harbor, Alaska.

This report, together with the pertinent papers, has been reviewed and the following comments are offered.

The proposed project would require the construction of three rubblemound breakwaters, aggregating 2,790 feet in length, so designed as to provide a protected harbor area of about 15 acres. A sheltered harbor is urgently needed to support the fishing economy which is the basic source of income for the people of Hoonah. Additionally, the project would require a diversion dike 2,125 feet in length to divert fresh water from the harbor and thus aid in the prevention of ice formation.

The Coast Guard notes that a sheltered harbor for the area is desirable and has indicated that the proposed harbor improvements would require the installation of a minor lighted navigational aid to mark the breakwater entrance. The estimated cost of the aid is \$2500.00 and it would require about \$200.00 annually for maintenance.

The Department of Transportation finds no objection to the conclusions or recommendations contained in your report. The opportunity afforded to review and offer comments on the report is appreciated.

Sincerely,

R. Y. EDWARDS
Rear Admiral, U.S. Coast Guard
Chief, Office of Public and
International Affairs

KEITH H. MILLER
GOVERNOR



STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

August 24, 1970

Lieutenant General F. J. Clarke
Chief of Engineers
United States Army
P. O. Box 7002
Anchorage, Alaska 99501

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For your information, the Alaska Department of Public Works has tentatively included the construction of the inner harbor improvements in their Capital Improvement Program for fiscal year 1972-73. This schedule is flexible, however, and can be revised to coincide with the progress of the Federal project. In addition, the Department is ready to assist the City of Hoonah in providing any additional local operation requirements as may be necessary.

The State of Alaska is in agreement with your report and concurs in your recommendations.

Sincerely yours,

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B. L. McMurtrey
Executive Assistant



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

November 6, 1970

Dear General Clarke:

This responds to your letter of July 31, 1970, asking for our comments on your proposed report and draft environmental statement on Hoonah Harbor, Alaska.

We have reviewed the proposed report and draft statement and in general concur with your recommendations. We offer the following comments for your information and use.

The Alaska District of the Corps of Engineers lists Hoonah in Zone 3 on its seismic probability maps. As such, it is assigned to the Zone where it is expected that earthquakes greater than magnitude 6 and possibly greater than 8 can occur and where there is a possibility of major damage to manmade structures.

In the event of a large earthquake in the area, the fine-grained materials in the harbor area, as well as the sand and gravel beach deposits along the shoreline, probably would be subject to strong ground motion. Such shaking could cause compaction and settlement of the underwater sediments with accompanying subsidence of structures built on them. Lateral spreading and slumping toward a free face, such as toward the deeper water off the north breakwater or into the dredged area, also could occur. Some of the materials, particularly the silts and fine sands, might be subject to liquefaction and flow seaward as a fluid mass, such as occurred at Seward and Valdez during the 1964 Alaskan earthquake. Tsunami waves or abnormal waves generated by submarine sliding might overtop the breakwaters by considerably more than the 3.7 feet now proposed as allowable for storm waves and abnormal tides.

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To protect water quality during the construction period in accordance with provisions of Section 21(a) of the Federal Water Pollution Control Act, as amended, and Executive Order 11507, we recommend that contract specifications require all contractors and subcontractors to:

1. Exercise care in the relocation of any petroleum product pipelines and take precautions in the handling and storage of hazardous materials, such as petroleum, herbicides, and pesticides, to prevent accidental spillages or usage that would result in water pollution.
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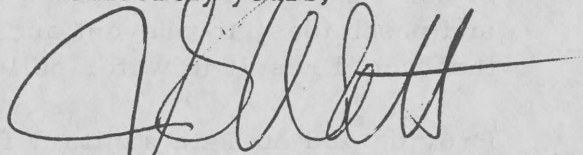
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1. The municipality shall provide for the collection and disposal of solid wastes from users of the small boat harbor.
2. The municipality shall provide for the collection, treatment and disposal of domestic and industrial liquid wastes from users of the small boat harbor.
3. Liquid fuel shall be dispensed to boats in an approved manner.

4. Plans and specifications for the foregoing shall be reviewed and approved by the State water pollution control agency and the Federal Water Quality Administration prior to approval of the project.

We appreciate the opportunity of presenting our views.

Sincerely yours,



Deputy Assistant Secretary of the Interior

Lt. General F. J. Clarke
Chief of Engineers
Attn: ENGCW-PD
Department of the Army
Washington, D. C. 20314



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

OFFICE OF THE SECRETARY

WASHINGTON, D.C. 20201

10 November 1970

Lt. General F. J. Clarke, USA
Chief of Engineers
U.S. Corps of Engineers
Department of the Army
Washington, D.C. 20315

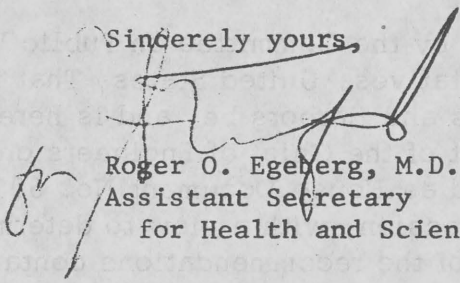
Dear General Clarke:

As requested in your letter of July 31, 1970, the report and draft environmental statement on a proposed navigation project at Hoonah Harbor, Alaska, have been reviewed by the appropriate agencies of the Department that have an environmental interest.

The report describes a proposed navigation project at Hoonah Harbor near the northeast corner of Chichagof Island in southeastern Alaska. In order to protect fishing vessels from wave action during storms, and damage from ice floes, the report proposes the construction of a 15.1 acre marina area with three rubble mound breakwaters and a rubble mound diversion dike. The proposal also provides for the construction of an entrance channel and maneuvering area.

Our review of the draft environmental statement indicates that the project as proposed will have no adverse effect on environmental matters of concern to the Department of Health, Education, and Welfare. We have no objection to the authorization of this project insofar as Departmental interests and responsibilities are concerned.

Sincerely yours,


Roger O. Egeberg, M.D.
Assistant Secretary

for Health and Scientific Affairs

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS



DEPARTMENT OF THE ARMY CORPS OF ENGINEERS BOARD OF ENGINEERS FOR RIVERS AND HARBORS WASHINGTON, D.C. 20315

IN REPLY REFER TO

ENGBR

19 June 1970

SUBJECT: Hoonah Harbor, Alaska

Chief of Engineers
Department of the Army
Washington, D. C.

1. Authority.--This report is in response to the following resolutions adopted 21 April and 19 May 1960, respectively:

Resolved by the Committee on Public Works of the United States Senate, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby, requested to review the report of the Chief of Engineers on Southeastern Alaska, published as House Document numbered 501, Eighty-third Congress, second session, with a view to determining whether any modification of the recommendations contained therein is advisable at this time, with particular reference to dredging and construction of a breakwater at Hoonah Harbor, Alaska.

Resolved by the Committee on Public Works of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors be, and is hereby, requested to review the report of the Chief of Engineers on Southeastern Alaska, published as House Document No. 501, Eighty-third Congress, Second Session, with a view to determining whether any modification of the recommendations contained therein is advisable at this time, with particular reference to dredging and construction of a breakwater at Hoonah Harbor, Alaska.

2. Description.--Hoonah Harbor is a cove off the eastern shore of Port Frederick, a fiord in the northeastern corner of Chichagof Island in southeastern Alaska. The city of Hoonah, bordering the harbor on the east, is the center of an important segment of the Alaskan fishery and provides the major labor pool and the base port for a fleet of 209 local and transient commercial fishing vessels. At present, vessels moor several abreast at an unprotected float, or anchor in the open harbor, where they are subject to damages and to losses in operating time from storms and floating ice.

3. Economic development.--Hoonah's economy is dependent on the fishing industry. Its tributary fishing grounds for salmon and shellfish extend 50 miles in all directions along the channels of Icy and Chatham Straits and Lynn Canal. Tenakee Springs, 40 miles to the south, and Elfin Cove, 40 miles to the west, are the nearest ports. The population of Hoonah in 1968 was 900 or about three-fourths of the entire tributary area population. It has one plant producing frozen and canned crab and one plant producing frozen and fresh salmon. Most of the salmon catch of the Hoonah fleet is landed at Excursion Inlet and Hawk Inlet for processing. The value to fishermen of the 1968 catch by the Hoonah fleet is estimated at \$2.1 million, based on landings of 8 million pounds of salmon and 1.1 million pounds of crab.

4. Existing improvements.--There is no existing Federal project for improvement of Hoonah Harbor. Existing improvements consist of privately owned docks for general cargo, petroleum, and fish catch transfer, and a small-boat float jointly constructed by the city of Hoonah and the State of Alaska.

5. Improvement desired.--Local interests desire development of a breakwater-protected mooring basin to reduce damages from waves and ice.

6. Improvements proposed.--The District Engineer finds that the major problem at Hoonah Harbor is the exposure of vessels to storms from the southwest-to-northwest quadrant. Waves and wind from this direction batter the moored vessels, damaging hulls, rails, and electronic gear. In addition, during southerly winter storms, wave-driven ice floes enter the harbor causing damages to hulls, rudders, and outboard motors. He reports that the most practical plan of improvement for the harbor would consist of three rubblemound breakwaters aggregating 2,790 feet in length and providing a protected area of 15.1 acres; an entrance channel 100 feet to 150 feet wide, 800 feet long, and 16 feet deep between breakwaters; and development of a

deepened basin with vessel mooring facilities within the protected area. He further reports that a 2,125-foot long rubblemound diversion dike would be necessary to divert fresh water and ice floes from the harbor. The Federal project would be limited to provision of the breakwaters, channel, and dike. Local interests would be responsible for providing adequate basin depths and berthing facilities, and for relocating a sewer. Initial development of 6.8 acres would accommodate the existing fleet based at Hoonah. Future expansion of 8.3 acres would accommodate the projected growth of the fishing fleet during the next 50 years.

7. Costs and justification.--Using September 1969 price levels, the District Engineer estimates the first cost of the proposed improvement at \$3,728,000, of which \$3,713,000 is the Federal cost of construction, including \$3,000 for navigation aids, and \$15,000 is the non-Federal cost for related lands, easements, rights-of-way, and sewer relocation. Annual charges for the improvement, based on an interest rate of 4-7/8 percent and a 50-year period of analysis, are estimated at \$220,400. Average annual benefits from reduction of vessel damages, increased fishery harvest, economic development, and refuge are estimated at \$379,200. The benefit-cost ratio is 1.7. The District Engineer recommends authorization of the improvement in accordance with his plan, subject to certain requirements of local cooperation. The Division Engineer concurs.

8. Public notice.--The Division Engineer issued a public notice stating the recommendations of the reporting officers and affording interested parties an opportunity to present additional information to the Board. Careful consideration has been given to the communications received.

Views and Recommendations of the Board of Engineers for Rivers and Harbors.

9. Views.--The Board of Engineers for Rivers and Harbors concurs in general in the views and recommendations of the reporting officers. Although it believes that additional salmon could be harvested by the existing fleet without the harbor, and has reservations concerning the benefits attributed to the local establishment of a bottomfish industry, the Board believes that with an adequate harbor, benefits could be realized from increased efficiency of operation and that these benefits, added to the benefits accruing to reduced boat damage, harbor of refuge, the increased shellfish catch, and economic development, are sufficient

to warrant construction of the harbor project. Further, the Board believes that other factors may be more important than economic considerations. The Board recognizes that isolated communities in southeastern Alaska, such as Hoonah, are dependent on the ocean for food and income. Adequate harbors are necessary for the safety and social and economic well-being of the inhabitants. The Board notes that Hoonah does not have a protected harbor. For these reasons, the Board believes that a protected harbor at Hoonah is vitally important to the area and, further, that such a project would encourage economic growth in the community.

10. Recommendations.--Accordingly, the Board recommends improvement of Hoonah Harbor, Alaska, to provide for a 15.1-acre mooring area with three rubblemound breakwaters totalling 2,790 feet in length; a rubblemound diversion dike 2,125 feet in length; and an entrance channel and maneuvering area 100 to 150 feet wide by 800 feet long and 16 feet deep; all generally in accordance with the plan of the District Engineer and with such modifications thereof as in the discretion of the Chief of Engineers may be advisable, at an estimated cost to the United States, exclusive of aids to navigation, of \$3,710,000 for construction and \$19,800 annually for maintenance: Provided that, prior to construction, local interests agree to:

a. Provide without cost to the United States all lands, easements, and rights-of-way required for construction and subsequent maintenance of the project and for aids to navigation upon the request of the Chief of Engineers;

b. Hold and save the United States free from damages that may result from the construction and maintenance of the project;

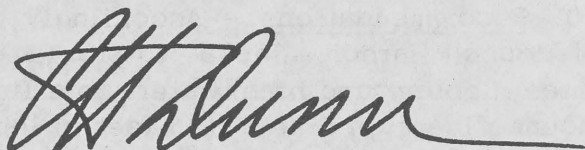
c. Provide and maintain without cost to the United States adequate berthing area and depths, and necessary mooring facilities and utilities, including a public landing with suitable supply facilities open to all on equal terms;

d. Accomplish without cost to the United States such utility or other relocations as necessary for project purposes; and

e. Establish regulations prohibiting discharge of pollutants into the waters of the harbor by users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State, and local authorities responsible for pollution prevention and control.

11. The net cost to the United States for the recommended improvements, exclusive of aids to navigation, is estimated at \$3,710,000 for initial construction and \$19,800 for annual maintenance.

FOR THE BOARD

A handwritten signature in dark ink, appearing to read 'C. H. Dunn', with a long horizontal flourish extending to the right.

C. H. DUNN
Major General, USA
Chairman

REPORT OF THE DISTRICT ENGINEER

SYLLABUS

The District Engineer finds that a need exists for a breakwater-protected harbor at Hoonah, Alaska. Benefits accruing from the improvements would exceed the costs and warrant participation by the Federal Government. Costs to the United States, exclusive of installation and maintenance of navigation aids, are estimated at \$3,710,000 for initial construction and \$19,800 annually for maintenance. The foregoing improvement is recommended subject to specified conditions of local cooperation.



DEPARTMENT OF THE ARMY

ALASKA DISTRICT, CORPS OF ENGINEERS

P.O. BOX 7002

ANCHORAGE, ALASKA 99501

IN REPLY REFER TO

NPAEN-PR-R

20 March 1970

SUBJECT: Hoonah Harbor, Alaska

Division Engineer, North Pacific

1. AUTHORITY. This report is submitted in response to the following resolutions by the Committees on Public Works of the United States Senate and House of Representatives, adopted 21 April and 19 May 1960, respectively.

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby, requested to review the report of the Chief of Engineers on Southeastern Alaska, published as House Document numbered 501, eighty-third Congress, second session, with a view to determining whether any modification of the recommendations contained therein is advisable at this time, with particular reference to dredging and construction of a breakwater at Hoonah Harbor, Alaska."

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE HOUSE OF REPRESENTATIVES, UNITED STATES, That the Board of Engineers for Rivers and Harbors, be, and is hereby, requested to review the report of the Chief of Engineers on Southeastern Alaska, published as House Document No. 501, eighty-third Congress, Second Session, with a view to determining whether any modification of the recommendations contained therein is advisable at this time, with particular reference to dredging and construction of a breakwater at Hoonah Harbor, Alaska."

2. PURPOSE AND EXTENT OF STUDY. The purpose of this study is to ascertain the need for and feasibility of providing a breakwater-protected small-boat harbor at Hoonah in Southeastern Alaska in the interest of improved navigation. Data for this report include engineering and economic information gathered at a public hearing held at Hoonah, Alaska,

on 4 April 1963 and obtained from a review of existing reports. Supplemental information was furnished by Federal, State and local governmental agencies, local civic representatives, and individuals concerned with harbor improvements at Hoonah. Hydrographic survey charts were furnished by the U. S. Coast and Geodetic Survey and meteorological data were provided by the ESSA Weather Bureau.

3. DESCRIPTION.

a. General. Hoonah, a city of 900 people, is situated at latitude 58°60'North and longitude 135°26'West on the northeast shore of Chichagof Island in Southeastern Alaska. The city lies on the east shore of Port Frederick near its confluence with Icy Strait, 70 water-miles west of Juneau, 130 water-miles north of Sitka and 950 air-miles northwest of Seattle, Washington. The city was incorporated in 1946 with a Mayor-Council form of government. Almost 90 percent of local employment is provided by fishing, fish processing, and supply and services for fishing vessels. The city is mainly a supply port, harbor-of-refuge, and labor source for the fisheries industry with only a small amount of the fleet's catch being actually processed at Hoonah's two commercial plants.

b. Harbor Conditions.

(1) Port Frederick is a fiord averaging 2 miles in width for most of its 20-mile length. It incises the northeastern shore of Chichagof Island adjacent to the fishing grounds of Icy Strait. Thirty-plus fathoms deep at the entrance, Port Frederick deepens to over 90 fathoms offshore of Hoonah, approximately 4 miles from the Strait. The city of Hoonah occupies the northern or mainland leg of a triangular cove cut into the eastern shore of Port Frederick. This shore, from Hoonah Point to the mud flats of the Gartina Creek delta, is about one-half mile in length and runs in a north-northwest to south-southeast direction. The southern leg of the triangle is formed by the foreslope of the Gartina Creek delta and Pitt Island with the base of the triangle being the one-half mile open water leg from Pitt Island to Hoonah Point. Offshore depths range from 16 fathoms adjacent to Port Frederick to 11 fathoms at the apex of the cove near the southeastern end of Pitt Island. These depths shoal steeply to the land, the approximate slope below tide level being 1 on 5. The 1 on 5 foreslope of the delta lies between Pitt Island and the mainland with the delta surface at an average depth of less than one fathom.

(2) The locally-based fleet consists of 49 fishing boats 50 feet or under in length, 2 tenders under 110 feet in length, and 82 utility boats under 20 feet long. An additional transient fleet of 148 fishing vessels 40 to 65 feet in length and 10 tenders to 110 feet utilize the harbor on a recurring basis as they fish the Icy Strait area.

(3) Hoonah Harbor is subject to deep water waves from the west to northwest sector and to a lesser extent to minor waves from the southwest across the Gartina Creek delta. The latter condition is most troublesome in the winter when it moves large masses of fresh-water ice from the mud flats into docks and mooring floats in the harbor proper. To avoid damage from the west or northwest storm waves it is necessary for all boats to leave their moorages and ride out the storm at anchor in the open waters of the cove. Boat and dock owners stress the need for protection from both storm waves and ice floes.

(4) Tides at Hoonah Harbor have a mean range of 12.4 feet, a diurnal range of 14.8 feet and an extreme range of about 25 feet.

c. Map and Chart References. Hoonah Harbor and vicinity are shown on U. S. Coast and Geodetic Survey Chart No. 8304, and on U. S. Geological Survey Map, "Juneau (A-5), Alaska," scale 1:63,360.

4. TRIBUTARY AREA. The area tributary to the supply and port facilities of Hoonah extends from Cross Sound, 50 miles west of Hoonah, to the vicinity of the Chatham-Peril Strait intersection, 50 miles to the south and east. The nearest ports offering comparable supply and service facilities are Juneau and Sitka, 70 and 130 water-miles, respectively, from Hoonah. The area population, inclusive of Hoonah, is approximately 1200 people. Other settlements in the area include Tenakee Springs, Hawk Inlet, Excursion Inlet, Elfin Cove and Gustavus. The first three have fish processing facilities which utilize most of the Hoonah catch. In addition, Tenakee Springs and Elfin Cove have small resident fleets of fishing craft. Fishing and fisheries-connected industries provide a vast majority of the present economic base. The area contains large stands of evergreen forest of commercial value which, though now being only lightly utilized, are expected to become of substantial economic importance in the future. This diversification in the economy should be independent of the fishing industry. Timber harvest is expected to lead to a growth in general navigation and an increase in the importance of Hoonah as a supply port and center of transportation. Except for mail, passengers and a minor amount of air-freight carried by small amphibious aircraft, all transportation in the area is by water. No future change in this pattern is likely; local roads will develop for distribution, but prime import and export cargo will be water-borne.

5. BRIDGES AFFECTING NAVIGATION. There are no existing or proposed bridges in the Hoonah area which would be affected by the harbor improvements.

6. PRIOR REPORTS. The only prior report concerning Hoonah was the general report on Southeastern Alaska, published as House Document No. 501, 83rd Congress, 2nd Session. This report concluded that improvement of the harbor at Hoonah was not economically justified at that time.

7. EXISTING CORPS OF ENGINEERS PROJECTS. There is no existing Corps of Engineers project in the vicinity of Hoonah.

8. LOCAL COOPERATION ON EXISTING AND PRIOR PROJECTS. There has been no prior requirement for local cooperation.

9. OTHER IMPROVEMENTS. Local improvements to the harbor other than docks consist of a single float for small boat mooring located about 800 feet north of the proposed harbor site. Originally constructed in 1956 by Hoonah, the float was modified in 1968 by the State of Alaska so that it now has stalls on the landward side for about 40 skiffs as well as berthing for about 20 seiners moored several abreast of its outer face. Cost of the original installation is unknown while the State's costs to date are given as \$25,300.

10. TERMINAL AND TRANSFER FACILITIES. These facilities consist of two privately-owned pile and plank structures. One, owned by a fish processing company, is used for transfer of raw fish from small boats. Attached to it is a float where a few vessels can moor and a landing float for amphibious aircraft. The second dock, owned by a petroleum products distributor, is used for fueling and general supply of the fishing vessels. Heavy cargo is not handled across these docks. All such cargo is barged into Hoonah and landed on the beach at high tide. The State of Alaska proposes to build a dolphin- and ramp-dock for the operation of a small ferry about one-quarter mile north of the proposed basin. A contract in the amount of \$34,412.50 for this purpose was awarded in November 1969.

11. IMPROVEMENT DESIRED. A public hearing to determine the needs and desires of local interests was held at Hoonah on 4 April 1963. Several proposals were made by local interests, which, when summarized, amounted to two disparate opinions as to the desired improvement. One of these opinions called for a breakwater extending northward from Pitt Island in front of the city to give protection to the entire waterfront. The second was for a breakwater-diversion dike across the tidal flat of Gartina Creek to Pitt Island to protect from southerly waves and ice, with another breakwater off of Pitt Island on the north to inclose a dredged mooring basin without protecting the docks and city waterfront. The latter plan was that developed by the Boat Harbor Committee while the total protection concept was presented by the representative of the private dock owners.

12. EXISTING AND PROSPECTIVE COMMERCE.

a. General. Commerce into and out of Hoonah is almost totally water-borne. Inbound freight is general cargo, petroleum products and raw fish for processing. Exports are nearly all processed fish products. Future growth is expected in the harvest of the timber resources of the

area with the export of the raw logs and possibly processed wood products becoming a major item in the local commerce.

b. Fisheries Production. The area tributary to Hoonah Harbor in 1968 produced the following fisheries harvest by species:

<u>Product</u>	<u>Catch (lbs)</u>	<u>Value to Fishermen *</u>
Salmon	24,006,396	\$6,001,600
Crab	956,143	<u>114,700</u>
		\$6,116,300

* Approximate

Fish landed at Hoonah in 1968 were:

Salmon	317,987 lbs
Crab	956,143 lbs

Comparative figures for 1967 were 271,993 and 826,464 pounds of salmon and crab, respectively. Known fisheries processing at Hoonah for the year was limited to crab as follows:

<u>Product</u>	<u>Processed Weight</u>	<u>Wholesale Value</u>
Canned Crab	14,722 lbs	\$ 29,505
Frozen Crab Meat	225,488 lbs	261,566
Frozen Crab in Shell	<u>74,141 lbs</u>	<u>23,650</u>
Totals	314,351 lbs	\$314,721

The totals for 1967 were 252,331 pounds valued at \$260,821. Growth in the fishing industry over the next 50 years is expected to reach sustained annual yields for the area tributary to Hoonah as follows:

<u>Species</u>	<u>Present Yield *</u>	<u>Sustained Yield</u>
Salmon	29,606,415 lbs	46,035,000 lbs
Crab	1,789,487 lbs	14,514,000 lbs
Bottomfish		53,500,000 lbs

* 5-year average, 1964 through 1968

In general, the Hoonah fleet is expected to harvest the same proportion of the increase as it is harvesting of the present catch.

c. Freight Handling. Records for 1968 of across-the-dock freight movement at Hoonah show 6,190 short tons of imports, including 4,568 tons

of petroleum products; and 389 tons of exports, mostly fish and fisheries products. The total freight movement was 6,579 short tons. Comparative 1967 figures are 5,987 tons imported and 163 tons exported, for a total of 6,150 tons. With the expected growth in forest products, the export figure should increase markedly within a few years.

13. VESSEL TRAFFIC. Paragraph 7b, Appendix A, lists the small boat using fleet at Hoonah. The fleet includes 82 small utility boats and 209 fishing vessels. In addition, the port is visited by occasional hunting boats, is served on a weekly basis by a small mail and cargo vessel, and is served on a demand basis by a small petroleum tanker. Heavy cargo is delivered by barge. Hoonah lies adjacent to Icy Strait within a few miles of its confluence with Cross Sound and with Chatham Strait-Lynn Canal. All these channels are primary navigation routes for vessels of all sizes plying the northern half of the Inside Passage; they are also rich fishing grounds. Thus, Hoonah is ideally situated as a harbor-of-refuge for through traffic and for the locally based fleet. Port Frederick at Hoonah is used as a staging area by tug and barge operators. The north-bound tows are given final preparation for their departure from the protected Inside Passage to the open waters of the Gulf of Alaska, while those southbound lay over here for repairs and rerigging necessitated by their high seas passage.

14. DIFFICULTIES ATTENDING NAVIGATION. Hoonah Harbor is open to wave attack in the quadrant from southwest to northwest. In addition, in the winter months, the harbor is subjected to the intrusion of ice floes formed on the tidal flats to the south of the city. Damage to moored vessels by both waves and ice is a frequent occurrence. Paragraph 9, Appendix B, contains a tabulation of estimated annual damage to vessels in the harbor. The preventable damages total \$34,400 annually to the vessels of the design fleet.

15. WATERPOWER AND OTHER SPECIAL SUBJECTS. There are no existing or proposed projects for waterpower or other related water resource development in the vicinity of Hoonah.

16. PLAN OF IMPROVEMENT.

a. General. Breakwater protection and ice diversion are the primary needs of Hoonah Harbor. The hydrography at Hoonah slopes steeply to water depths of up to 16 fathoms within 100 yards of shore except at the south end of the harbor where the delta of Gartina Creek forms a shallow, gently sloping tide flat between mainland Hoonah and Pitt Island. The great water depths make an offshore breakwater to shelter the entire waterfront, as desired by some local interests, economically impracticable. However, the delta area between Pitt Island and Hoonah, using the island as a partial natural breakwater, provides a site where development of a protected small-boat harbor is feasible. The site offers good breakwater foundations in

relatively shallow water, has soft, easily dredged material in the basin area, can be fully protected from waves and ice, is near fuel and supply sources, is easily accessible from both the city and the water, and meets the desires of most local interests as expressed by their Harbor Committee.

b. Basis of Design. Harbor improvements are based on:

(1) A present design fleet of 187 vessels consisting of: 51 local fishing vessels, 82 local utility boats and 54 transient boat equivalents.

(2) A future design fleet of 320 vessels consisting of: the present fleet plus an additional 73 fishing vessels and 60 utility boats.

The State of Alaska Division of Water and Harbors has verified the adequacy of the proposed improvements to accommodate the present and projected fleets. Breakwater dimensions and details are based on a 3.7-foot wave height effective over the quadrant from southwest to northwest (see paragraph 13, Appendix A; and sketch B). The design allows for moderate overtopping in the event of a simultaneous occurrence of a maximum tide and a severe storm.

c. Harbor Design. The proposed improvement, shown on plate 1, consists of: (1) three rubble-mound breakwaters aggregating 2,790 feet in length protecting a harbor area of 15.1 acres, with an entrance and access channel to the harbor area; (2) a rubble-mound diversion dike 2,125 feet long to exclude ice and fresh water from the harbor; and (3) non-Federal improvement of the inclosed basin as a berthing area by dredging to provide adequate depths and area and provision of mooring facilities and utilities. The first stage basin proposed totals 6.8 acres in area with room for an additional 8.3 acres for future expansion when necessary. Two breakwaters lie on the seaward side of the basin. One, a 1,040-foot long angled structure, bounds the basin on the north while the other, 250 feet long, overlaps the main breakwater and channel on the northwest. The third breakwater, 1,500 feet in length, incloses the basin on the west. The diversion dike, continuous with the west breakwater, incloses the basin on the south or tide-flat exposure. The crest elevation of all the preceding structures is 24 feet above MLLW; top width is 6 feet; and side slopes are 1 on 2. The entrance and access channel is 150 feet wide and 800 feet long to a depth of 16 feet below MLLW. The basin and channel are in soft, easily dredged, silty sand and gravel. They will have design slopes of 1 on 10 with a 2-foot overdepth allowance. The slopes may flatten to 1 on 15 gradually during the project life necessitating maintenance dredging. However, the occurrence and rate of degradation are sufficiently uncertain that no advance maintenance is proposed. The adjacent structures are so located that the slope flattening will not undermine them.

d. Spoil Disposal. Dredged material will be spoiled into water deeper than 40 feet MLLW or onto the tidal flats south of the harbor. Disposal in water would be prohibited within 1,000 feet of the harbor or any shore installations while spoiling on the tide flats would not be allowed in any manner which might pollute Gartina Creek, shoal the harbor, or have an unfavorable impact on fish and wildlife.

17. SHORELINE CHANGES. Construction of the proposed project will bar one present channel for tidal flows from the Gartina Creek flats. This diversion may lead to some sediment transport from the flats and deposition near the southwestern end of Pitt Island. However, such activity should be limited in extent and without adverse effect on the shoreline. Because of the generally rocky character of the shores other than at the tide flats, no other shoreline changes are likely.

18. REQUIRED AIDS TO NAVIGATION. The Commander, 17th Coast Guard District, estimates that one light on the Entrance Breakwater will be required as a navigation aid. The estimated cost of installation, including contingencies, is \$3,000. Annual maintenance cost for the aid is estimated as \$300.

19. ESTIMATE OF FIRST COST. First cost of the proposed harbor improvements, based on September 1969 prices, and inclusive of contingency allowances, engineering and design, and supervision and administration is estimated as follows:

a. Federal:

Breakwaters & Dike, including	
Pre-dredged Foundations	\$3,121,800
Entrance Channel	235,200
Engineering & Design, Supervision &	
Administration	<u>353,000</u>
Total, Corps of Engineers	\$3,710,000
Navigation Aids	<u>3,000</u>
Total Federal First Cost	\$3,713,000 *

b. Non-Federal:

Lands, Easements & Right-of-Ways	\$ 10,000
Sewer Outfall Relocation	<u>5,000</u>
Total Non-Federal	\$ 15,000 *

c. Total Project First Cost \$3,728,000 *

* Does not include pre-authorization study costs of \$42,353 or non-Federal self-liquidating costs for basin dredging and berthing facilities.

20. ESTIMATE OF ANNUAL CHARGES. The annual charges for the proposed improvement based on a life of 50 years and an interest rate of 4-7/8 percent are estimated as follows:

Interest & Amortization, Federal	\$ 199,500
Interest & Amortization, Non-Federal	800
Annual Maintenance, Project Features	19,800
Annual Maintenance, Navigation Aids	<u>300</u>

Total Annual Charges	\$ 220,400
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21. ESTIMATE OF BENEFITS.

a. General. The economy of Hoonah is based on commercial fishing, fish processing, and supply and services to the fishing industry. A protected harbor would reduce damages to vessels thus reducing operating costs and increasing time available for fishing, would promote growth in the level of fishing activity and would provide a much needed harbor-of-refuge to give both a tangible economic benefit and a reduction in risk to human lives.

b. Damage Reduction. Benefits would accrue to the harbor users as the cost of damages prevented. This annual benefit is estimated as \$34,400.

c. Increased Fishing Harvest. This benefit would accrue to the fishing fleet by increased fishing time and by growth in the fleet because of the availability of a protected harbor. The annual benefit is estimated as follows:

(1) Salmon Fishery	\$ 188,200
(2) Shellfish Fishery	\$ 107,700
(3) Bottomfish Fishery	<u>\$ 25,500</u>
(4) Total Annual Benefit	\$ 321,400

d. Economic Development. This benefit would accrue to the local economy as added employment and income from harbor construction and management. The annual benefit is estimated as \$13,900.

e. Harbor of Refuge. This benefit accrues to all vessels operating in the area as reductions in vessel loss and damages due to having a safe haven from storms. The annual benefit is estimated as \$9,500.

f. Summary of Annual Benefits.

Damage Reduction	\$ 34,400
Increased Fishery Harvest	321,400
Economic Development	13,900
Harbor of Refuge	<u>9,500</u>

Total Annual Benefits \$ 379,200

22. COMPARISON OF BENEFITS AND COST. Comparison of the estimated annual benefits of \$379,200 with the estimated annual charges of \$220,400 results in a benefit-to-cost ratio of 1.7 to 1 and net annual benefits of \$158,800. This indicates that the proposed improvements are economically justified.

23. PROJECT FORMULATION. The project was formulated to maximize net benefits while fulfilling the present and projected needs to the greatest extent possible. Consideration was given to existing needs, projected growth in the using fleet, site capabilities and the desires of local interests. The project is designed to provide a safe harbor of 6.8 acres for the 209 vessels (equivalent to 105 fulltime vessels) and 82 utility boats of the present fleet. There is the capability of expansion to 15.1 acres for an ultimate capacity of 225 fulltime commercial vessels and 150 utility craft to accommodate the projected growth of the fishing fleet during the 50-year project life. Boats expected to use the harbor have loaded drafts up to 11 feet; allowing for a 4-foot minus tide and a 1-foot clearance, a 16-foot channel depth was selected as adequate for the needs of the fleet. A 100-foot wide entrance channel and 150-foot wide maneuvering area were selected to allow safe passage of vessels entering or leaving the harbor. Alternative plans of development were studied, but the selected plan is considered the most favorable with a maximum of net benefits and the fullest feasible response to local desires.

24. PROPOSED LOCAL COOPERATION.

a. It is proposed as an essential feature of Federal participation in providing the proposed improvements that local interests be required to furnish assurance that they will:

(1) Provide, without cost to the United States, all lands, easements, and rights-of-way required for construction and subsequent maintenance of the project, and for aids to navigation upon the request of the Chief of Engineers;

(2) Hold and save the United States free from damages that may result from the construction and maintenance of the project;

(3) Provide and maintain, without cost to the United States, adequate berthing area and depths, and necessary mooring facilities and

utilities, including a public landing with suitable supply facilities open to all on equal terms;

(4) Accomplish, without cost to the United States, such utility or other relocations as necessary for project purposes; and

(5) Establish regulations concerning discharge of untreated sewage, garbage and other pollutants in the waters of the harbor by the users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State and local authorities responsible for pollution prevention and control.

b. Local interests, in a resolution, dated 5 November 1969, (Appendix C, page C-12), indicate a willingness and ability to meet the requirements for local cooperation. The State of Alaska has assumed general responsibility for provision of mooring facilities at all Alaskan harbors.

25. APPORTIONMENT OF COST. All benefits generated by the project would accrue to general interests; therefore, the total cost of the proposed improvements, exclusive of the requirements for local cooperation, paragraph 24 above, would be borne by the Federal Government.

26. COORDINATION WITH OTHER AGENCIES.

a. General. All interested Federal and State agencies have been informed of the nature of the proposed improvements and afforded an opportunity to present their views. Copies of the U. S. Fish and Wildlife Service report and correspondence of all commenting agencies are included in Appendix C.

b. Fish and Wildlife Agencies. The U. S. Fish and Wildlife Service, in a report dated 6 June 1969, outlined their evaluation of the fishery resource in the area tributary to Hoonah. Their estimates of maximum sustained yields within the next 50 years indicate that the area is capable of supporting large increases in the harvest of salmon, shellfish, and bottomfish. The Fish and Wildlife Service, in their report of 4 December 1969, stated that the project, as planned, would have no adverse effects on fish and wildlife. The State of Alaska, Department of Fish and Game, concurred in this view.

c. Federal Water Pollution Control Administration. The Federal Water Pollution Control Administration, in their letter of 15 December 1969, concluded that the project is consistent with the applicable Federal and State Water Quality Standards and with Executive Order 11288. Agreement to fulfill the requirements of the Federal and State water quality standards has been outlined as a specific requirement of local cooperation

prerequisite to construction of the project. Adherence to these standards would assure prevention of pollution within the harbor.

d. State of Alaska, Department of Public Works. In a letter dated 19 December 1969, the Director, Division of Water and Harbors, provided a preliminary layout for inner harbor facilities and estimated the costs of these facilities and of basin dredging.

27. DISCUSSION.

a. The economy of Hoonah is dependent on fishing, fish processing and service to the fishing industry. The area tributary to Hoonah, extending approximately 50 miles to the west, northeast and south, is a highly productive fishing ground for salmon and shellfish. The average harvest for the five years 1964 through 1968 was 29.6 million pounds of salmon and 1.8 million pounds of shellfish. This catch represents about 7.5 million dollars annually to the area fishermen. The wholesale value of this catch after processing is approximately 14.9 million dollars annually. The total wholesale value of the State of Alaska's fishing industry over the same period averaged approximately 160 million dollars annually, about 25 percent in value of the nation's canned and frozen seafood supply.

b. The U. S. Fish and Wildlife Service estimates that the fishery resources of the Hoonah tributary area are capable of supporting additional sustained landings of all species except halibut. In particular, the sustained yields for all crab species and bottomfish, now only lightly exploited in this area, are far greater than the present levels of harvest. Exploitation of this food resource would be encouraged by improved harbor facilities at Hoonah.

c. The harbor at Hoonah is exposed to storms from the southwest to northwest quadrant. The local and transient fishing fleet moors several vessels abreast at the present limited harbor facilities and incurs damages from waves and, in the winter months, ice floes. Improved facilities would greatly reduce damages, thus providing a more favorable environment to encourage fleet growth and fuller utilization of the area potential in meeting the nation's need for a greater food supply.

d. The plan of improvement selected as the most feasible for protecting the fishing fleet consists of breakwaters inclosing a 15.1-acre mooring area. Initial development of 6.8 acres of mooring area would accommodate the existing, locally-based craft as well as transient boats fishing from Hoonah Harbor; future development of an additional 8.3 acres would accommodate projected fleet growth for the 50-year project life. Hydrographic characteristics of the Hoonah area limited site consideration to that proposed. Of the alternative development plans studied for this site, the plan selected is the most favorable in that it provides a maximum of protection for both present and projected fleets, is responsive to

local desires, and offers the maximum net benefits. Project benefits would return \$1.72 for each Federal dollar invested in the improvements and produce net benefits of \$158,800 annually.

e. All interested Federal and State agencies have been informed of the nature of the proposed improvements and given an opportunity to express their views. Fish and Wildlife agencies stated that the project, as presently planned, should have no adverse effects on fish or wildlife.

f. The City of Hoonah, as the project sponsor, has indicated its ability and willingness to provide the required items of local cooperation.

g. Additional information called for by Senate Resolution No. 148 is contained in a supplement to this report.

28. CONCLUSIONS. It is concluded that improvement in the interests of commercial fishing and general navigation at Hoonah, Alaska, is both feasible and justified. The provision of a breakwater-protected harbor will reduce vessel damages, will increase fisheries harvest resulting in substantial gains to the national food supply, and will provide a harbor of refuge to serve a major fishing ground and heavily traveled navigation channel. The annual benefits accruing from the improvements will exceed the annual costs sufficiently to warrant construction and maintenance by the Federal Government.

29. RECOMMENDATIONS. I recommend improvement of Hoonah Harbor, Alaska, to provide for a 15.1-acre mooring area with three rubble-mound breakwaters totalling 2,790 feet in length; a rubble-mound diversion dike 2,125 feet in length; and, an entrance channel and maneuvering area 100 to 150 feet wide by 800 feet long to a depth of 16 feet as described in this report and shown on plate 1. Net cost to the United States for the recommended improvements, exclusive of aids to navigation, is estimated as \$3,710,000 for construction and \$19,800 annually for maintenance and replacements. Adoption of this project would be subject to the provision that, prior to construction, local interests would agree to:

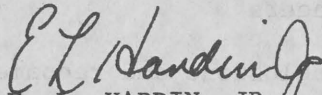
a. Provide, without cost to the United States, all lands, easements, and rights-of-way required for construction and subsequent maintenance of the project, and for aids to navigation upon the request of the Chief of Engineers;

b. Hold and save the United States free from damages that may result from the construction and maintenance of the project;

c. Provide and maintain, without cost to the United States, adequate berthing area and depths, and necessary mooring facilities and utilities including a public landing with suitable supply facilities open to all on equal terms;

d. Accomplish, without cost to the United States, such utility or other relocations as necessary for project purposes; and

e. Establish regulations concerning discharge of untreated sewage, garbage and other pollutants in the waters of the harbor by the users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State and local authorities responsible for pollution prevention and control.



E. L. HARDIN, JR.
Colonel, Corps of Engineers
District Engineer

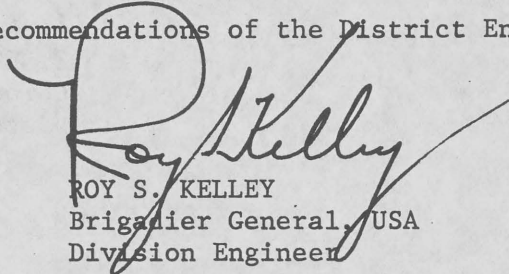
[First endorsement]

NPDPL-PF (20 Mar 70) 1st Ind
SUBJECT: Review of Reports, Hoonah Harbor, Alaska

DA, North Pacific Division, Corps of Engineers, 210 Custom House, Portland,
Oregon 97209 21 April 1970

TO: Chief of Engineers

I concur in the conclusions and recommendations of the District Engineer.



ROY S. KELLEY
Brigadier General, USA
Division Engineer

APPENDIX B - ECONOMICS

HOONAH HARBOR, ALASKA

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APPENDIX B - ECONOMICS

HOONAH HARBOR, ALASKA

SECTION I - PRESENT AND FUTURE ECONOMIC CONDITIONS

1. GENERAL ECONOMY. The general economy of Southeast Alaska is based primarily upon two basic industries -- fisheries and forestry. The wholesale value of fishery products produced in Southeast Alaska was \$55.5 million for the year of 1968 as compared to approximately \$87.4 million for forestry products. In recent years tourism has produced an increasing and significant volume of revenue in Southeast Alaska, as have salaries and other governmental expenditures at Juneau. The economy of Hoonah and the tributary area is based principally upon the fishing industry. Forestry, to date, has not been significant nor has tourism.

2. GEOGRAPHY AND CLIMATE OF THE TRIBUTARY AREA. Hoonah is situated on the east side of Port Frederick and on the northeast shore of Chichagof Island. At this location near the junction of Chatham and Icy Straits, Hoonah is strategically located to serve the heavily used shipping route of vessels transiting the Inside Passage and the Cape Spencer portal to the Gulf of Alaska. Vessels utilizing Lynn Canal and Chatham Strait also pass within a few miles of Hoonah. Hoonah is located about 70 miles west of Juneau, 100 miles south of Skagway, and 130 miles north of Sitka, by water. The islands and the mainland of Southeast Alaska, including Chichagof Island and nearby Admiralty Island are heavily forested with Sitka spruce, Western hemlock and cedar. To date, little or no use has been made of these resources of the tributary area. The climate of Hoonah and this section of Southeast Alaska is strongly influenced by the warm Japanese Current. Winter temperatures are generally above freezing with summer highs in the 60-degree range. Precipitation ranges between 75 and 100 inches annually. The principal resource of the tributary area is the productive fishery found in the Icy and Chatham Straits waters. The Alaska Department of Fish and Game has included the northern portion of Chatham Strait in their Statistical Unit Number 12 and Icy Strait and Cross Sound in Statistical Unit 14. These are considered the fishery tributary area to Hoonah. It is also the tributary area to fish processing plants located at Excursion Inlet, Hawk Inlet, and Tenakee Springs.

3. POPULATION, EMPLOYMENT AND COMMUNITY DATA. Hoonah is principally populated by people of Thlingit Indian extraction. The population has been reported or estimated as follows:

<u>Year</u>	<u>Number</u>
1939	716
1950	563
1960	686
1968	900

In 1968 approximately 190 families resided in Hoonah. The labor force was composed of 187 males and 116 females. Employment during 1968 in the Hoonah area was approximately as follows:

<u>Industry</u>	<u>Number of Employees</u>
Fisheries	236
Processing	36
Fishermen	200
Forestry	6
Commercial Business	34
Education	20
Government	4
Communications	10
Total	310

During the off-fishing period, most of the fishermen are unemployed. Hoonah was incorporated in 1946 as a first-class city. It operates with a mayor-council type of government. It finances its operations through a sales tax, through net profits from its electrical and domestic water utilities, and a limited collection of property taxes. Until it was eliminated from the Tongass National Forest in 1927, the land in the Hoonah area was under Federal ownership and in reserved status. On 30 August 1927 a total of 187.14 acres identified as U. S. Survey 1899 was eliminated and designated as the Hoonah Townsite. Being a native townsite, trustee deeds were subsequently issued to the land occupants. These were mostly "restricted" deeds which forbid subsequent sale or disposal. Such deeds are not eligible for taxation nor are they acceptable for use as collateral for credit purposes. However, this restriction can be removed by consent of the Bureau of Indian Affairs. Such deeds are seldom issued in recent years.

4. COMMERCE AND TRANSPORTATION.

a. Waterborne Transportation. Hoonah has two private docks and a city-owned dock across which most waterborne freight to or from Hoonah moves. Freight movements across these docks during 1967 and 1968 were as follows, by general category:

<u>Waterborne Freight Across the Hoonah Docks *</u>	<u>1967</u>	<u>1968</u>
	<u>Tons</u>	<u>Tons</u>
<u>Receipts</u>		
Food and Spirits	365	436
Commodities	194	267
Building Materials	110	197
Petroleum Products	4,722	4,568
Fresh Fish and Shellfish	569	680
Salt and Cannery Supplies	27	42
Total Receipts	5,987	6,190

* "Waterborne Commerce of the United States," 1967 and 1968, unpublished data on file at Seattle District, Corps of Engineers.

<u>Waterborne Freight Across the Hoonah Docks (contd)</u>		<u>1967</u>	<u>1968</u>
		<u>Tons</u>	<u>Tons</u>
<u>Shipments</u>			
Processed Fish and Shellfish		156	368
Miscellaneous Products		<u>7</u>	<u>21</u>
Total Shipments		163	389
		=====	=====
Total Freight Movements		6,150	6,579

A mail boat serves Hoonah and makes weekly stops to unload freight, mail, and some passengers.

b. Air Transportation. Air transportation to and from Hoonah is performed by amphibious type aircraft. Hoonah has no airport at this time.

5. FORESTRY. As stated previously, because of its cool and moist climate and other favorable factors, the islands and mainland of Southeast Alaska support luxurious stands of Sitka spruce, Western hemlock, Alaska cedar, and minor hardwood species. In the Juneau working circle of the U. S. Forest Service approximately 66 percent of the timber resource is composed of hemlock, 32 percent of spruce, 1 percent of Alaska cedar, and 1 percent of miscellaneous species. The lands of the area tributary to Hoonah are similarly forested. To date, little use has been made of these resources. Presently, only one small logging operation is based at Hoonah. A recent sale, February 1968, sold 8-3/4 billion board feet of Tongass National Forest timber, located on the mainland south of Juneau, on the west side of Admiralty Island, and in the Yakutat area with the stipulation that a pulp mill be established by 1973. The company has selected a site on Lynn Canal about 50 miles north of Juneau for its pulp plant. The stimulus of this plant to the general economy of Southeast Alaska will indirectly benefit Hoonah. Hoonah will also benefit economically as a source of labor for part of the approximately 400 jobs that will become available in logging activities, especially when the nearby stands on the west side of Admiralty Island are harvested.

6. FISHERIES.

a. General. The waters of Port Frederick, Chatham and Icy Straits, and Cross Sound are richly endowed with the several species of salmon, Dungeness crab, shrimp, halibut, and a variety of bottom fish species not commercially utilized at this time. Statistical Units 12 and 14 comprise the tributary area for the fishing fleets serving processing plants at Hoonah, Excursion and Hawk Inlets, and Tenakee Springs. Salmon are harvested by use of seines, gill nets, and by troll lines. Most of the salmon harvested in Southeast Alaska are caught by use of seines from vessels limited by regulation to not more than 50 feet in register length. According to Alaska Department of Fish and Game officials ^{1/}, the purse

^{1/} Letter from Thomas H. Richardson, Area Management Biologist, Commercial Fisheries Division, Alaska Department of Fish and Game, December 30, 1969.

seine fleet harvests over 90 percent of the salmon taken in Units 12 and 14 and the remainder are taken by troll gear. This same authority estimates that the Hoonah-based salmon fleet accounts for at least one-third of the salmon caught in Units 12 and 14. Most of the salmon caught by trolling are caught by commercial fish vessels; however, a sizeable harvest is made by sport fishermen possessing commercial licenses who, though primarily week-end fishermen, sell their catch to the commercial market. Practically all (96 percent) of the troll catch are Kings or Silvers. The salmon seining season varies from year to year but has averaged about 3-1/2 days a week for the two months of July and August, totalling about 28 fishing days. Troll fishing in the Inside Waters is open for 6-1/2 months for Kings, and 3 months for Silvers. The season for shellfish is open the year round. King crab pots are limited to not more than 40 per vessel and Dungeness pots to not more than 300.

b. Fishing Fleet. The vessels that operate in the Hoonah area and which the proposed harbor is designed to accommodate, are listed as follows by type and class of Vessel:

Type of Vessel	Local Number	Transient		Total Number of Equiv.
		Number	% of Season at Hoonah	Number of Boat Equiv.
Salmon Seiners	27	100	25	25
Salmon Trollers	21	31	50	15
Crabbers	1	17	67	11
Tenders	2	10	30	3
Total	51	158	--	54

In addition to the fishing vessels approximately 82 outboard skiffs are owned by residents of the Hoonah area.

c. Salmon Harvest. Salmon landed at Hoonah are troll caught Kings and Silvers. Records indicate that 317,987 pounds, round weight, of salmon were landed at Hoonah in 1968 and 271,993 pounds in 1967. Salmon harvested in the tributary area (Units 12 and 14) by year are compared with the total weight harvested in Southeast Alaska, as follows:

Year	Pounds of Salmon Harvested by Year		
	Tributary Area (Units 12, & 14)	Southeast Alaska	Percent of Southeast Total
1968	24,006,396	141,602,651 *	17.0
1967	24,597,042	49,842,233	49.3
1966	33,404,529	140,729,181	23.7
1965	32,232,000	83,139,060	38.8
1964	33,792,110	115,948,420	29.1
Total	148,032,077	531,261,545	
Annual Average	29,606,415	106,252,309	27.9

* Tentative

Of the annual average of 29,606,415 pounds of salmon harvested, the Hoonah-based fleet is estimated to have caught at least 1/3 or about 9,868,000 pounds per year. According to estimates, 90 percent or more were caught by seiners, or 8,881,200 pounds, and 10 percent by trollers, or 986,800 pounds. This catch averages about 170,800 pounds per seining vessel and 27,400 pounds per troller. Catch per vessel fluctuates widely from year to year, as well as between areas fished and vessel operators, because of the many variables involved.

d. Shellfish Harvest. The shellfish harvest of the tributary area comprises landings made at Hoonah and at Tenakee Springs. These are shown as follows for the past 5 years. Also shown are their percentages of the Southeast Alaska harvest for the same years.

Pounds of Shellfish Harvested, Southeast Alaska & Tributary Area							
Year	Tributary Area			Southeast	Percent of Southeast		
	Hoonah	Tenakee	Total		Hoonah	Tenakee	Trib. Area
1968	1,193,555*	679,885	1,873,440	7,305,810*	16.3	9.3	25.6
1967	927,777	752,400	1,680,177	7,518,923	12.3	10.0	22.3
1966	900,753	832,800	1,733,553	6,443,094	14.0	12.9	26.9
1965	826,464	1,272,000	2,098,464	6,830,752	12.1	18.6	30.7
1964	956,143	605,520	1,561,663	8,264,000	11.6	7.3	18.9
Total Annual	4,804,692	4,142,605	8,947,297	36,362,570			
Average	960,938	828,519	1,789,457	7,272,514	13.2	11.4	24.6

* Tentative

As shown above, the Hoonah-based shellfish fleet has harvested 53.7 percent of the shellfish caught in the tributary area during the 1964-1968 period. The catch averaged 80,078 pounds per vessel. Harvest per boat was low because these are largely older vessels originally designed for salmon fishing.

e. Fishery Processing Plants and Production. Fishery processing plants located within the tributary area and the type of products produced are as follows:

Plant	Location	Fishery Product
Coastal Glacier Sea Foods	Hoonah	Frozen & canned Dungeness Crab
Thompson's Cold Storage	Hoonah	Frozen & fresh salmon
Totem Seafoods	Tenakee Springs	Canned Dungeness crab
Peter Pan Seafoods	Hawk Inlet	Canned Salmon
Excursion Inlet Packing	Excursion Inlet	Canned salmon

Processing production of Dungeness crab and wholesale value by year are shown as follows for the Coastal Glacier Sea Foods plant at Hoonah:

	1964	1965	1966	1967	1968
<u>Canned Crab</u>					
Pounds canned	12,675	45,084	1,658	14,508	14,722
Wholesale value	\$ 24,056	\$ 81,221	\$ 3,080	\$ 29,075	\$ 29,505
<u>Frozen Crab Meat</u>					
Pounds frozen	853,484	117,332	850,000	185,352	225,488
Wholesale value	\$1,095,020	\$125,545	\$915,450	\$215,008	\$261,566
<u>Frozen Crab in Shell</u>					
Pounds frozen	65,928	27,869	41,411	52,471	74,141
Wholesale value	\$ 25,910	\$ 10,089	\$ 15,281	\$ 16,738	\$ 23,650
Total Wholesale Value	\$1,144,986	\$216,855	\$933,811	\$260,821	\$314,721

7. GROWTH POTENTIAL.

a. The Fishery Resource. Fishery biologists of the U. S. Bureau of Commercial Fisheries foresee continued growth in fishery resources in Southeast Alaskan waters over the forthcoming 50-year period^{2/}. Anticipated growth of the fishery resources of the tributary area (Units 12 and 14) is prorated on the basis of the 5-yr average annual harvest of each species as compared to the average annual harvest for Southeast Alaska. Growth anticipated for the Hoonah fishery is also prorated in accordance with its proportionate part of the previous 5-year average annual catch. These are shown in the following table:

Estimated Maximum Annual Sustainable Yield, in pounds, live weight								
Species of Fish	Harvest, 5-yr Average			Estimated Maximum Sustainable Yield				
	SE	Trib.	%	SE	Trib.	% of	Hoonah Fishery	
	Alaska	Area	of	Alaska	Area	Trib.	MSY	
	(000)	(000)	SE	(000)	(000)	Area	(000)	
Salmon	106,252	29,606	27.9	165,000	46,035	33.3	15,345	
Shellfish	7,272	1,789	24.6	59,000	14,514	53.7	7,794	
Bottom Fish	24,495	-	-	1,070,000	53,500*	**	3,000	

* Estimated at 5%

** Capacity of 1 processing plant

b. Future Harvest by Existing Vessels.

(1) Salmon. The salmon seining season in Southeast Alaska averages about 28 fishing days per season or, on a 10-hour day basis, approximately 280 hours in total. Seiner operators have estimated that they lose from 1 to 1-1/4 hours of fishing time for each of the 28 round trips they make during the season because of congested harbor conditions, repair of preventable damages, and related conditions. The prevention of these delays would increase the future fishing time and production of the existing salmon seiner fleet by 11 to 12 percent. On this basis, a future

^{2/} Letter from Harry L. Rietze, Regional Director, U. S. Bureau of Commercial Fisheries, 6 June 1969; page C-1, Appendix C.

harvest of 9,910,500 pounds annually by the existing seiner fleet, an increase of 1,029,300 pounds over the present 8,881,200-pound annual catch, is estimated. The future production of the salmon trollers is not anticipated to change materially over their present catch of about 27,400 pounds per boat or 986,800 pounds annually. The total increase in future salmon catch by the existing fleet is estimated to total 1,029,300 pounds annually, or 18.8 percent of the total annual increment of 5,477,000 pounds permitted by the complete harvest of the 15,345,000-pound maximum sustainable yield.

(2) Shellfish. No increase in the future catch is anticipated for the present shellfish vessels. They are largely converted salmon seiners without the size and efficiency of modern shellfish vessels. The increased future harvest of shellfish will be accomplished by a fleet of new modern vessels.

(3) Bottom Fish. There are no vessels presently engaged in the bottom fish industry in the tributary area.

c. Future Harvest by New Vessels.

(1) Salmon. A maximum sustainable yield of 4,447,700 pounds annually is foreseen as the annual harvest of a new fleet of vessels. Such a catch represents 81.2 percent of the total annual increment of 5,477,000 pounds estimated to be permitted by complete harvest of the 15,345,000-pound maximum sustainable yield. To harvest this increase it is estimated that 15 new salmon seiners with a representative annual catch of 260,000 pounds per vessel and 20 new troller vessels with an annual catch of 27,400 pounds per vessel will be added to the fleet.

(2) Shellfish. The annual shellfish harvest for the Hoonah fishery is anticipated to increase from the present 961,000-pound (rounded) average to a maximum sustainable yield of 7,794,000 pounds, an increase of 6,833,000 pounds, all attributable to new vessels. To harvest this increase it is estimated that 23 new vessels, averaging a representative annual catch for modern shellfish vessels of 300,000 pounds each, will be added to the fleet.

(3) Bottom Fish. The potential maximum sustainable yield for the now unutilized bottom fish resource in the tributary area is estimated at 53,500,000 pounds annually. It is not realistic, however, to assume that the full utilization of the potential resource will be reached within the lifetime of the proposed project. A more reasonable estimate is to assume a harvest based upon the capacity of a single processing facility to be established at Hoonah, or about 3,000,000 pounds annually. With a representative annual catch of 300,000 pounds per vessel it is estimated that 10 new bottom fish vessels will be added to the fleet.

d. Summary, Present and Future. The average harvest anticipated for both existing and new boat equivalents that will be needed to harvest the maximum sustainable yields predicted for the three species are summarized as follows:

Present and Future Catch, Harvest Requirements,
and Boat Equivalents*

	<u>Present</u>		<u>Future</u>
		<u>SALMON</u>	
	<u>Pounds</u>		<u>Pounds</u>
Hoonah Fishery:			
Seiners (90%) 8,881,200			13,810,500
Trollers (10%) 986,800			1,534,500
52 Seiners @ 170,800	8,881,200	Old Seiners: 52 @ 190,586	9,910,500
		New Seiners: 15 @ 260,000	3,900,000
36 Trollers @ 27,400	986,800	Old Trollers: 36 @ 27,400	986,800
		New Trollers: 20 @ 27,400	547,700
Totals	9,868,000		123
			15,345,000
		<u>SHELLFISH</u>	
Hoonah Fishery:			
12 B. E. @ 80,078	961,000	Old B. E. 12 @ 80,078	961,000
		New B. E. 23 @ 300,000	6,833,000
Totals	961,000	35	7,794,000
		<u>BOTTOM FISH</u>	
Hoonah Fishery:	0	New 10 @ 300,000	3,000,000
Totals	0	10	3,000,000
		<u>TOTAL BOAT EQUIVALENTS</u>	
Fishing Boat Equivalents	100	168	
Tender & Other	5	10	
Total Boat Equivalents	105	178	

* Boat Equivalents (B.E.) equate transient vessels to resident vessels according to length of the fishing season and their estimated use of the local harbor.

SECTION II - BENEFIT ANALYSIS

8. BENEFITS TO EXPANDED FISHERIES.

a. Salmon Fishery. Based upon forecasts made by the U. S. Bureau of Commercial Fisheries, a gradual increase of the salmon resource over the forthcoming 50-year period is anticipated to occur, and a maximum sustainable yield of 46,035,000 pounds will be available for harvest from the tributary area. The Hoonah salmon fleet now harvests about one-third of the salmon caught in the tributary area, according to fishery specialists. Its future catch, on the same ratio, would be 15,345,000 pounds annually or an annual increase of 5,477,000 pounds. The gross annual value of the increased salmon production is determined as follows by use of a 50-year increasing gradient series, money worth 4-7/8 percent compounded annually, and an average of current prices for the various species of salmon of \$0.25 per pound:

$$\begin{aligned} 5,477,000 \text{ lbs} \times \$0.25 \div 50 \text{ yrs} &= \$27,385 \text{ annual increment} \\ \$27,385 \times 305.51651 \times .05372 &= \$449,452 \text{ gross value} \end{aligned}$$

It is anticipated that the existing 88 salmon vessels will catch 1,029,300 pounds or 18.3 percent of the increased harvest. Since the incremental catch would be possible at little or no increase in fixed costs, the only additional costs would be the trip expenses which vary in proportion to operations. Thus, for these existing vessels the net value to the fishermen is reported to be 50 percent of the gross value. The remaining 81.2 percent or 4,447,700 pounds of the increased harvest will be caught by the 35 new vessels which would be added to the fleet during the life of the project. The net value of the catch by the new vessels would reflect both fixed and variable expenses and is reported to be 40 percent of the gross value. Annual benefits are derived as follows:

$$\begin{aligned} \$449,452 \times 18.8 \times 50\% &= \$ 42,248 \text{ net to existing fleet} \\ \$449,452 \times 81.2 \times 40\% &= \$145,982 \text{ net to new fleet} \\ \text{Total} &= \$188,230 \text{ net value} \end{aligned}$$

The addition of new vessels to the Hoonah fishing fleet and the increased harvest by the existing fleet are dependent upon the provision of the proposed harbor. Therefore, the entire net value of \$188,230 (\$188,200 rounded) is claimed as a project-derived benefit.

b. Shellfish Fishery. The shellfish resource of the tributary area (see previous discussion) is anticipated by fishery experts to increase sufficiently to permit a maximum sustainable harvest of 14,514,000 pounds annually, or an increase over present annual harvests of 12,724,543 pounds. As the Hoonah fishery has harvested about 53.7 percent of the tributary area harvest, it is assumed this ratio will continue in the

future. The Hoonah harvest is expected to increase by 6,833,000 pounds annually over its present average harvest of 961,000 pounds, to a maximum sustainable annual harvest of 7,794,000 pounds. Such a harvest will be attained gradually over a 50-year period. A 50-year gradient series is used to evaluate the present worth of this increasing productivity, with money worth 4-7/8 percent compounded annually, and a weighted average of current prices paid for shellfish of \$0.12 per pound, as follows:

$$\begin{aligned} 6,833,000 \text{ lbs} \times \$0.12 \div 50 \text{ years} &= \$16,400 \text{ annual increment} \\ \$16,400 \times 305.51651 \times .05372 &= \$269,163 \text{ gross value} \end{aligned}$$

The incremental catch of shellfish is anticipated to be entirely harvested by new specialized shellfish vessels. The net value to the fishermen will reflect both fixed and variable expenses and is reported to be 40 percent of the gross value for new vessels. Of the \$269,163 gross value, 40 percent, or \$107,665, represents net value of the increased harvest. As new vessels will not be added to the Hoonah fishing fleet unless the proposed harbor is provided for their protection, the entire net value of the increment is claimed as an annual benefit in the amount of \$107,665 (\$107,700 rounded).

c. Bottom Fish Fishery. The future bottom fish resource foreseen by fishery experts for Southeast Alaska waters by the end of the 50-year project life period would support a maximum sustained harvest of more than 1 billion pounds annually worth \$60,223,900, based upon a weighted average of current prices of \$0.04261 per pound for the several species of bottom fish. The projected development of a bottom fish fishery at Hoonah is based upon the establishment of a processing facility 10 years after completion of the proposed harbor. The first year harvest of 1 million pounds of raw fish would increase to 3 million by year 20 and would remain constant during the remaining 30 years of project life. Benefits are evaluated in four steps: (1) a uniform annual series analysis involving 1 million pounds at \$0.04261 per pound between the 10th and the 50th year of the project; (2) a gradient series analysis of growth from 1 million to 3 million pounds between the 10th and 20th year expressed as a present value; (3) a uniform series analysis for 2 million pounds between the 20th and 50th year; and (4) the accumulated present worth values expressed as an annual benefit and reduced to a net annual benefit by a net to gross factor of 40 percent reported to be representative for new vessels for the industry.

Step 1:	1,000,000 lbs x \$0.04261 x 10.845	= \$462,124
Step 2:	2,000,000 lbs x \$0.04261 ÷ 10 x 39.689 x .621	= \$210,134
Step 3:	2,000,000 lbs x \$0.04261 x 6.019	= \$512,930
	Total Present Value	\$1,185,188
Step 4:	\$1,185,188 x .05372 x 40% = \$25,467 (\$25,500 rounded)	

The bottom fish harvest will be accomplished by a new fleet of modern design. These larger vessels will not base their operations at Hoonah

without the provision of the proposed harbor. It is assumed, therefore, that the proposed harbor will be directly responsible for all of the \$25,500 annual net value of the future bottom fish harvest and this amount is claimed as an annual benefit of the proposed project.

9. DAMAGE PREVENTION. Considerable damage is sustained each year by boats, both local and transient, while using the present unprotected Hoonah harbor. Waves generated by strong wind action jostle the boats tied closely together in this overcrowded harbor, and railings, siding, superstructure, and electronic gear are frequently damaged. In addition, drifting ice from the Gartina Creek flats damages hulls, rudders, and motors on outboard craft. A survey of repair costs incurred over recent years indicates the following averages by size and class of vessel:

Damages to Local and Transient Vessels					
Type of Vessel	Average Length (ft)	Average New Value	Average Annual Damage	Number of Boat Equivalents	Total Damage
Salmon seiners	46	\$45,000	\$450	52	\$23,400
Salmon trollers	32	30,000	300	36	10,800
Crabbers	50	48,000	500	12	6,000
Tenders	45	40,000	300	5	1,500
Skiffs	15	3,000	50	82	4,100
Total					\$45,800

The proposed harbor will provide the required space for individual berthing and will divert floating ice away from the harbor area. It is not realistic to assume all damage will be prevented by provision of the proposed harbor. However, it is conservatively estimated that 75% of the annual cost of damage repair will be prevented and will represent an average annual benefit of \$34,350 (\$34,400 rounded).

10. HARBOR OF REFUGE. Hoonah, located near the junction of Icy and Chatham Straits, is situated on the heavily used shipping route taken by nearly all north and south bound vessels utilizing the Cape Spencer portal to the Inside Passage. In addition to through traffic, smaller fishing vessels concentrate in the productive fishing grounds of the Icy Strait area. There are no improved harbors in the Hoonah tributary area. The closest and somewhat distant improved harbors are located at Elfin Cove, Juneau, and Sitka. The proposed harbor will provide a much needed refuge from storms on this heavily traveled shipping lane. Benefits of such a protective facility are based on records of vessel losses due to foundering or stranding during storms in the immediate vicinity. Records^{3/} of vessel losses for the 50-year period of 1886-1936 indicate 23 vessel losses totalling \$750,750 in value lost, or \$1,790,000 in terms of 1965

^{3/} Data assembled and mapped by Punnett, Parez and Hutchinson, Civil-Engineers, San Francisco, California, from data supplied by Alaska Packers Association, 1938.

price levels^{4/}, or \$35,800 average annual losses. Recent records^{5/} for the 4-year period of 1962-1965 indicate four vessel losses estimated to total \$160,000, or \$40,000 average annual loss. Using an average of the annual losses for these two periods and estimating that the proposed harbor would prevent 25 percent of the losses gives an average annual benefit to the general public for the refuge value of the harbor of \$9,475 (\$9,500 rounded).

11. ECONOMIC DEVELOPMENT. Hoonah, with its high seasonal unemployment rate, has been identified by the Economic Development Administration as a depressed labor area. The construction of the proposed harbor and the employment that its management will create will substantially benefit the local economy and thereby help reduce its dependency upon governmental grants-in-aid payments. The construction of the project will create employment for the otherwise unemployed workers of the area. In general, 50 percent of the cost of such a project will be the cost of labor, of which about 10 percent is estimated to be supplied locally and to be a project benefit. Wages earned for the management of the harbor will also benefit the local economy. As normal employment levels will be re-established gradually over a 20-year period, the annual benefit is computed by the use of a 20-year decreasing gradient series with money worth 4-7/8 percent compounded annually, as follows:

a. Harbor Construction - 1-year period.

Direct cost of project, $\$3,357,000 \times 50\% \times 10\% = \$167,850$
 $\$167,850 \times .05372 = \$9,017$ (\$9,000 rounded)

b. Harbor Management - 20-year period.

Harbor Master annual wage $\$12,000 \div 20 \text{ yrs} \times 151.89005$
 $= \$91,134$
 $\$91,134 \times .05372 = \$4,896$ (\$4,900 rounded)

c. Total Annual Benefits (rounded). \$13,900

12. SUMMARY OF BENEFITS. Benefits are general in nature and are summarized as follows:

Expanded Fisheries		\$321,400
Salmon fishery	\$188,200	
Shellfish fishery	107,700	
Bottom fish fishery	25,500	
Damage Prevention		34,400
Harbor of Refuge		9,500
Economic Development		13,900
Harbor construction	9,000	
Harbor management	4,900	
Total Annual Benefits		<u>\$379,200</u>

^{4/} "Statistical Abstract of the United States, 1966" purchasing power of the dollar, 1940-1965.

^{5/} "Merchant Vessels of the United States, 1962-1965" values based on a rate of \$1,000 per running foot of keel length.

APPENDIX C - CORRESPONDENCE

HOONAH HARBOR, ALASKA

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UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES

BOX 1668
JUNEAU, ALASKA, 99801

June 6, 1969

Ref: NPAEN-PR-TE

Colonel E. L. Hardin, Jr.
District Engineer
U. S. Army Engineering District, Alaska
Corps of Engineers
P. O. Box 7002
Anchorage, Alaska 99501

Dear Colonel Hardin:

This responds to your letter of January 9 requesting commercial fishery data pertinent to your harbor improvement feasibility studies for Myer's Chuck, Hoonah, and Metlakatla.

The information which you requested is for the most part included in the attached tables. Table I shows the number of pounds of salmon actually landed, or estimates thereof, at each of the three harbors during the past five years. Records show that the catch of salmon in the immediate vicinity of Myer's Chuck and Hoonah is much larger than the landings. This situation can largely be attributed to the fact that there are no salmon canneries at these harbors. Salmon landings at Myer's Chuck and Hoonah are all troll caught fish.

At Myer's Chuck, two Ketchikan canneries station cannery tenders which buy salmon from seineboats during the open periods of the season. The number of vessels or quantity of fish involved is not known; however, local sources report that seiners often tie up 7 deep at the float during the closed periods. Also, many trollers enroute to the Fair-weather fishing grounds stop at Myer's Chuck during March and April.

At Hoonah, 314 trollers made several landings each during the 1968 season. In addition, it is estimated that there were from 80 to 90 seiners in port during closed periods of the season.

The salmon cannery at Metlakatla reports that an average of 150 landings by cannery tenders were made annually during the last 5 years. These vessels vary in length from 72 feet to 105 feet. The records do not show the number of individual fishing boat deliveries.

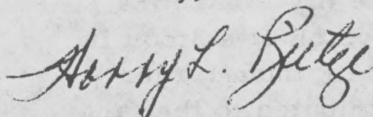
Of the three harbors, Hoonah is the only one which has significant shellfish landings, consisting of Dungeness crab, as shown in Table II. A cannery at Hoonah processes the crab and reports that they plan to add new equipment in 1969 to begin processing of tanner crab.

Table III shows the estimated maximum sustained yield for Southeast Alaska for the various commercial fishery resources available. We prefer to project sustained yield for large areas such as Southeast Alaska rather than for the smaller harbor vicinity area since the fishery resources in any part of this area are available to vessels making any southeast Alaska harbor their home port. In addition to the availability of the resource, the adequacy of the harbor and the presence or absence of processing plants largely determine the landings at a particular harbor.

Tables IV and V list average prices paid per pound to fishermen and wholesale prices for fish products in Southeast Alaska, respectively.

While this data package is not as complete as we would have liked to present, we understand that you have deadlines to meet and do not wish to delay our submission any longer. Please let us know if we can be of further assistance.

Sincerely,

A handwritten signature in cursive script, reading "Harry L. Rietze".

Harry L. Rietze
Regional Director

Enclosures

Table I

Pounds of salmon landed at Myers Chuck, Hoonah, and Metlakatla
1964-68

<u>Year</u>	<u>Myers Chuck</u> <u>1/</u>	<u>Hoonah</u>	<u>Metlakatla</u>
1968	100,000	317,987	8,197,392
1967	85,000	271,993	743,865
1966	85,000	2/	10,627,116
1965	75,000	2/	2,831,518
1964	90,000	2/	7,876,125

1/ Poundage landed at Myers Chuck is a rounded estimate and includes less than 5% halibut.

2/ Landings for these years not readily available.

Table II

Pounds of Dungeness crabs landed at Hoonah
1964-68

<u>Year</u>	<u>Pounds Landed</u>
1968	1,200,000
1967	927,777
1966	900,753
1965	826,464
1964	956,143

Table III

Commercial fishery resources of Southeast Alaska--
estimated maximum sustained yield compared to 1967 catch

Species	Millions of Pounds	
	1967 Catch	Estimated Maximum Sustained Yield
Salmon	49.8	165
Halibut	17.3	18
King crab	.6	17
Dungeness crab	4.1	12
Tanner crab	.003	14
Shrimp	2.8	16
Herring	6.0	400
Sablefish	1.4	20
Pacific Ocean perch	0	300
Cod and cod-like fish	0	50
Flat fish	0	300

Table IV

Prices paid per pound to fishermen in Southeastern Alaska
1963-67

Species	Average price per lb. to fishermen (dollars)					
	1963	1964	1965	1966	1967	5-Yr. Average
Salmon	.14	.14	.16	.17	.20	.16
Halibut	.19	.21	.22	.31	.20	.23
Herring	.015	.015	.014	.015	.015	.015
Sablefish	.09	.16	.14	.17	.14	.14
Bottom Fish	.07	.05	.08	.11	.08	.08
Crab:						
King	.10	.10	.10	.12	.14	.11
Dungeness	.12	.12	.10	.11	.13	.12
Tanner	---	.10	---	---	.10	.10
Shrimp	.04	.04	.045	.05	.05	.045

Table V

Wholesale prices per pound received by processors for fish products in Southeastern Alaska, 1963-67.

Species	Average price per lb. to processor (dollars)					
	1963	1964	1965	1966	1967	5-Year Average
Salmon	.49	.48	.73	.54	.63	.57
Halibut	.29	.48	.43	.40	.30	.38
Herring	.06	.07	.09	.14	.04	.08
Sablefish	.23	.27	.23	.24	.24	.24
Bottom Fish	.17	.12	.20	.20	.13	.16
Crab:						
King	1.28	.92	.76	.76	1.37	1.02
Dungeness	.93	.87	.90	1.01	.73	.89
Tanner	---	.30	---	---	.45	.38
Shrimp	1.05	1.01	.89	1.10	1.10	1.03



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES

BOX 1668

JUNEAU, ALASKA. 99801

December 4, 1969

Ref: NPAEN-PR-P

Colonel E. L. Hardin, Jr.
District Engineer
U. S. Army Engineering District, Alaska
Corps of Engineers
P. O. Box 7002
Anchorage, Alaska 99501

Dear Colonel Hardin:

This is in response to your letter of November 24, 1969, which requested our comments on your proposed small-boat harbor design for Hoonah, Alaska. This letter constitutes our report on the project within the meaning of Section 2 of the Fish and Wildlife Coordination Act (48 Stat. 401 as amended; 16 U.S.C. 661 et seq.). The Alaska Department of Fish and Game has been consulted and concurs with the views expressed in this report.

We have reviewed your preliminary design drawing of the proposed improvement and do not anticipate that this project would have any significant adverse effects on fish and wildlife resources. It should be of considerable benefit in providing additional protected berthing space for the many fishing vessels and small boats which use the harbor.

We appreciate the opportunity to comment on this project and request that we be informed of any modification of project plans.

Sincerely yours,

for Robert R. Simpson
Harry L. Rietze
Regional Director



UNITED STATES
DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION,
NORTHWEST REGION

Room 9, Federal Building. 605 Fourth Avenue
Anchorage, Alaska 99501

IN REPLYING ADDRESS:

~~ALASKA WATER LABORATORY~~
~~UNIVERSITY OF ALASKA CAMPUS~~
~~COLLEGE, ALASKA 99705~~

December 15, 1969

Colonel E. L. Hardin, Jr.
Corps of Engineers
District Engineer
Alaska District
P. O. Box 7002
Anchorage, Alaska

Subject: Small boat harbor, Hoonah, Alaska

Dear Colonel Hardin:

This will respond to your letter of November 24, 1969, requesting our comments for the small boat harbor project at Hoonah, Alaska.

This project is consistent with the applicable Federal and State Water Quality Standards and with the requirements of Executive Order 11288. The Alaska Department of Health and Welfare also concurs with this determination.

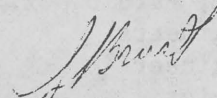
It is suggested that the agreement with the municipality contain language which will enable them to also provide for appropriate pollution control facilities. Such examples as the following are suggested:

- A. Users of the facility will employ measures to prevent or control spills from fuels or lubricants.
- B. Litter, refuse and domestic waste from vessels and dock facilities will be disposed of in a manner approved by the State of Alaska. Toilet and other domestic wastes will not be discharged to the waters without treatment.
- B. Bilge, ballast or wash water pumped from vessels will not be discharged to the harbor without acceptable removal of solids, oils or toxic compounds.
- D. We suggest that the municipality consider providing facilities for removing and disposing of sanitary waste from boats berthed at the proposed facilities, and also providing waste receptacles to receive garbage, bottles, cans and litter from these boats.

- E. It is suggested that the municipality be made aware of the fact that increased boat usage at this facility may require waste handling and treatment facilities in order to comply with Federal and State Water Quality Standards.
- F. It is also recommended that this project contain the stipulation that the municipality and users conform at all times with Federal and State Water Quality Standards and other applicable standards.

We appreciate this opportunity to be of service.

Sincerely yours,



Stanley Brust, Chief,
Federal Activities Branch

SB:dn



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDER (O)
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, Alaska 99801


. 3260
5 December 1969

From: Commander, Seventeenth Coast Guard District
To: District Engineer, Alaska District, Corps of Engineers

Subj: Navigation Aids, Hoonah Harbor, Alaska

Ref: (a) Your ltr NPAEN-PR-R dtd 24 Nov 69

1. Reference (a) has been reviewed. It is estimated that one (1) minor lighted navigational aid marking the "ENTRANCE BREAKWATER" may be justified for the proposed project. Cost estimates are:
Establishment: \$2500.00; Annual maintenance: \$200.00.


D. R. FOSTER
By direction

Encl: (1) Print and
File PR
"Hoonah"

STATE OF ALASKA

KEITH H. MILLER, GOVERNOR

DEPARTMENT OF PUBLIC WORKS

DIVISION OF WATER AND HARBORS

POUCH Z — JUNEAU 99801

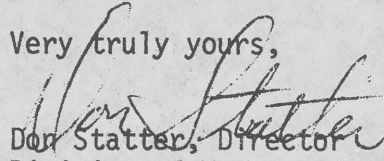
December 19, 1969

E. L. Hardin, Jr.
Colonel, Corps of Engineers
District Engineer
P.O. Box 7002
Anchorage, Alaska 99501

Dear Colonel Hardin:

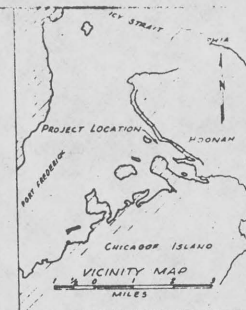
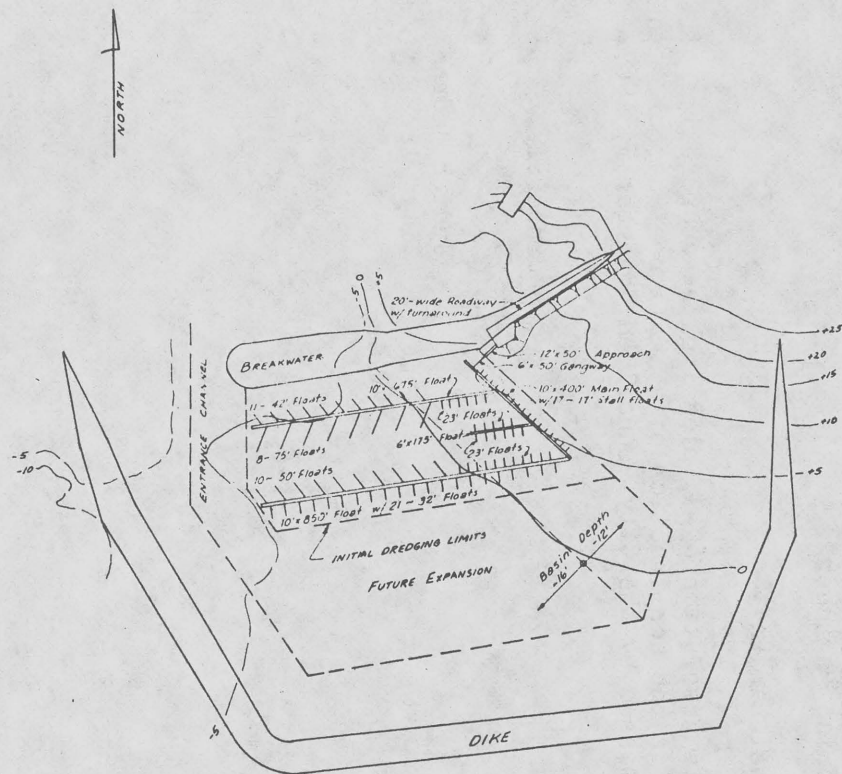
Enclosed are revised drawings and cost estimates for Inner Harbor improvements at the proposed Hoonah and Metlakatla small boat harbors, as requested in your correspondence of October 31 and November 24, 1969.

Very truly yours,


Don Statter, Director
Division of Water and Harbors

DS:hb

Enclosures



Initial Capacity.....130 boats

Estimate:	
Approach	\$ 75,000.
Gangway	3,500.
Dikes	3200 LF @ 6 th 20,800.
Floats	33,200 SF @ 8 th 265,400.
	\$364,900.

+30%	109,470.
Proj. Est Total	\$474,370.

Dredging.....113,000 cu yd @ 3rd \$525,000.

REFER TO CORPS OF ENGINEERS DWG. No HOONAH HARBOR PLATE 1

HOONAH PRELIMINARY HARBOR LAYOUT

REVISED

1"=250'
DS MILLER
12/16/69

CITY of HOONAH

FRANK SEE, MAYOR

P. O. Box 38

HOONAH, ALASKA 99829

November 6, 1969

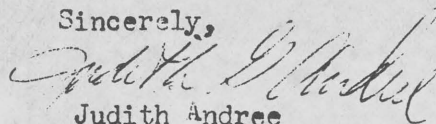
District Engineer
Alaska District
Corps of Engineers
P.O. Box 7002
Anchorage, Alaska 99501

ATTN: E.L. Hardin, Jr.
District Engineer

Dear Colonel Hardin:

Enclosed is Resolution 69-3, pledging the cooperation of the City of Hoonah in the construction of a small boat harbor. This resolution was passed by the City Council on November 5, 1969.

Sincerely,



Judith Andree
City Clerk

Enclosures

CITY of HOONAH

FRANK SEE, MAYOR

P. O. Box 38
HOONAH, ALASKA 99829

CITY COUNCIL OF HOONAH

RESOLUTION NO. 69-3

WHEREAS, the Committee on Public Works of the United States Senate, by resolution, adopted 21 April 1960, requested the Board of Engineers for Rivers and Harbors to review the report of the Chief of Engineers on Southeastern Alaska, published as House Document No. 501, 83d Congress, 2d Session, with reference to the feasibility of providing navigation improvements at Hoonah, Alaska; and

WHEREAS, a small-boat harbor at that location is being considered in a report under preparation by the District Engineer, Alaska District, Corps of Engineers at Anchorage, Alaska; and

WHEREAS, sheltered berthing facilities for small boats would be provided by a mooring basin protected by two breakwaters under consideration for construction by the United States; and

WHEREAS, no Federal money appropriated shall be expended on the construction of any project until States, political subdivisions thereof, or any other responsible local agencies have given assurances satisfactory to the Secretary of the Army, that they will assume certain enumerated obligations, now therefore;

BE IT RESOLVED, by the City Council of Hoonah, Alaska, in regular session assembled this 5th day of November, 1960, that said city hereby indicates its approval in general of the proposed project and favors its construction by the United States under conditions prescribed, and accepts responsibility to comply with the requirements for local cooperation, to wit:

- a. Provide, without cost to the United States, all lands, easements, and rights-of-way required for construction and subsequent maintenance of the project and for aids to navigation upon the request of the Chief of Engineers;
- b. Hold and save the United States free from damages that may result from the construction and maintenance of the project;
- c. Provide and maintain, without cost to the United States, adequate berthing depths, surface area, and necessary mooring facilities and utilities, including a public landing with suitable supply facilities open to all on equal terms;
- d. Accomplish, without cost to the United States, such utility or other relocations as necessary for project purposes;

CITY of HOONAH

FRANK SEE, MAYOR

P. O. Box 38

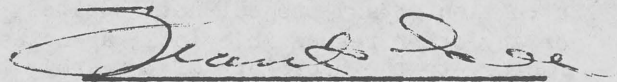
HOONAH, ALASKA 99829

e. Establish regulations concerning discharge of untreated sewage, garbage and other pollutants in the waters of the harbor by the users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State and local authorities responsible for pollutions prevention and control;

this decision being the thinking of the present City Council and a suggestion to further councils with the understanding that the final decision to participate will rest with the council holding office at the time participation is required; and

BE IT FURTHER RESOLVED, that a certified copy of this resolution be forwarded to the District Engineer, Alaska District, Corps of Engineers, P.O. Box 7002, Anchorage, Alaska, 99501.

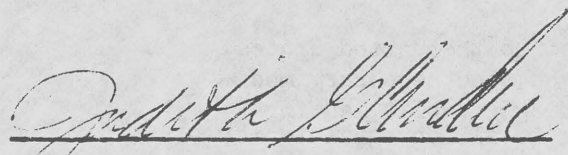
CITY COUNCIL OF HOONAH, ALASKA


Mayor

Approved (vote tally) *aye 5*
by City Council *aye 5*
of Hoonah, Alaska, on *absent 1*
Apr 5, 1969

CERTIFICATION:

Attest and certified to be a true copy of Resolution No. 69-3 adopted by City Council of Hoonah, Alaska, on the date therein set forth.


City Clerk

HOONAH HARBOR, ALASKA

Information called for by
Senate Resolution #148, 85th Congress
Adopted 28 January 1958

1. PROBLEMS CONSIDERED. Hoonah Harbor is a cove in the east shore of Port Frederick near the northeast corner of Chichagof Island in South-eastern Alaska. The shores are rocky and slope precipitously to water depths of 11 to 16 fathoms except at the south end of the cove where the delta of a fresh-water stream forms a broad, shallow tidal flat of easily dredged sediments. The extreme range of tide at Hoonah is 25 feet, the diurnal range is 14.8 feet and the mean range is 12.4 feet. Hoonah Harbor is open to storms in the quadrant from southwest to northwest and to intrusion of fresh-water ice formed on the tidal flat. Considerable damage is caused to the extensive local and transient commercial fishing fleet by both waves and ice. The harbor is open and in use year-round.

2. RECOMMENDED IMPROVEMENTS. The recommended improvements consist of three rubble-mound breakwaters totalling 2,790 feet in length and a rubble-mound diversion dike 2,125 feet in length, all with a width of 6.0 feet at a crest elevation of 24 feet above mean lower low water (MLLW) to inclose an area for development as a mooring basin. An entrance channel-maneuvering area 100 to 150 feet wide by 800 feet long to a depth of 16 feet below MLLW will give access to the basin. Initial capacity of the basin will be approximately 105 vessels from 22 to 110 feet in length and 82 skiff-type utility boats.

3. PROJECT COST. Estimated costs for the recommended project, based on September 1969 prices, are:

Federal (construction of breakwaters, dike, channel and navigation aids)	\$3,713,000
Non-Federal, non-self liquidating (lands, easements, rights-of-way and sewer outfall relocation)	<u>15,000</u>
Total Project First Cost	\$3,728,000

4. BENEFIT-TO-COST RATIO. Average annual costs, benefits and benefit-to-cost ratios for the recommended project, based on 50- and 100-year economic lives and interest at 4-7/8 percent, are:

<u>Item</u>	<u>Project Life</u>	
	50 yrs	100 yrs
Average Annual Costs:		
Interest & Amortization		
Federal	\$ 199,500	\$ 182,600
Non-Federal	800	700
Maintenance & Replacements	<u>20,100</u>	<u>20,000</u>
Total Average Annual Costs	\$ 220,400	\$ 203,300
Average Annual Benefits:		
Damage Reduction	\$ 34,400	\$ 34,400
Increased Fishery Harvest	321,400	374,800
Economic Development	13,900	12,700
Harbor of Refuge	<u>9,500</u>	<u>9,500</u>
Total Average Annual Benefits	\$ 379,200	\$ 431,400
Benefit-to-Cost Ratios	1.7 to 1	2.1 to 1
Average Net Benefits	\$ 158,800	\$ 228,100

5. INTANGIBLE PROJECT BENEFITS. The major intangible benefit to be derived from the construction of the proposed improvements is the reduction in hazard to human life through the provision of a safe haven for vessels during the frequent violent storms characteristic of these waters.

6. OPERATION AND MAINTENANCE. Maintenance cost to the project features is estimated as \$19,800 annually for future replacement of breakwater stone, dike repairs, maintenance dredging and condition surveys. An estimated \$300 annually will be required for Coast Guard maintenance of the navigation aids.

7. LOCAL COOPERATION. The terms of local cooperation for the recommended project provide that, prior to construction, local interests furnish assurances satisfactory to the Secretary of the Army that they will:

a. Provide, without cost to the United States, all lands, easements, and rights-of-way required for construction and subsequent maintenance of the project, and for aids to navigation upon request of the Chief of Engineers;

b. Hold and save the United States free from damages that may result from construction and maintenance of the project;

c. Provide and maintain, without cost to the United States, adequate berthing area and depths, and necessary mooring facilities and utilities including a public landing with suitable supply facilities open to all on equal terms;

d. Accomplish, without cost to the United States, such utility or other relocations as necessary for project purpose; and

e. Establish regulations concerning discharge of untreated sewage, garbage and other pollutants in the waters of the harbor by the users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State and local authorities responsible for pollution prevention and control.

8. CAPACITY TO MEET PRESENT AND FUTURE NEEDS. The proposed improvement will provide adequate protection and berthing area to the existing fleet. The protective structures inclose sufficient development area to serve an ultimate fleet of 225 vessels and 150 utility boats. This is considered sufficient for the projected growth during the 50-year project life.

9. OTHER PLANS STUDIED. An off-shore breakwater to protect the entire Hoonah waterfront as requested by some local interests was given preliminary consideration but was rejected as prohibitively expensive due to the massive breakwater required by the great natural bottom depths. All other alternatives were restricted to various plans of development at the proposed shallow water site as it alone offered any chance of economically feasible development. The proposed project provides the greatest protection at minimum cost and thus gives the maximum net benefits of the alternative plans studied.

10. DISCUSSION. The populace of Hoonah has shown great interest, need for and willingness to cooperate in the construction of a protected harbor. The recommended project is responsive to most local desires and is considered amply justified by the studies and analyses summarized in the report.



